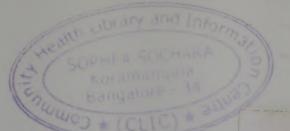
### ETHNO MEDICINAL GARDENS



FOUNDATION FOR REVITALISATION OF LOCAL HEALTH TRADITIONS



CLIC SOPHEA





### SOCHARA

Community Health Library and Information Centre (CLIC)

Centre for Public Health and Equity No. 27; 1st Floor, 6th Cross, 1st Main, 1st Block, Koramangala, Bengaluru-34.

THIS BOOK I	MUST BE RE	TURNED BY	Y .
	*		

All rights reserved. No part of this book may be reproduced, stored in retrieval system or transmitted in any form or by any means electronic, electrostatic, magnetic tape, mechanical, photocopying, recording or otherwise without the prior written permission of the copy right holder and the publisher.

2010 Copyright © Institute of Ayurveda and Integrative Medicine
Photographs Courtesy N M Ganesh Babu, K Haridasan and K Ravikumar in addition
to FRLHT database
Design by Trapeze, 500 Koramangala Village Bangalore 560095
Printed by: Pentaplus Printers Pvt Ltd

1<sup>st</sup> Print : 2010 2<sup>nd</sup> Print : 2017

No. of Copies: 1000

Price: ₹ 600/-

SecretS of

### ETHNO MEDICINAL GARDENS

NM GANESH BABU, GEETHA SURESH AND K HARIDASAN







This Manual is Published under the Centre of Excellence Program of Ministry of Environment, Forests and Climate Change. Government of India



DR-435

### ACKNOWLEDGEMENT

We wish to acknowledge and thank the support, motivation and co-operation that we received from everybone at I-AIM while preparing this Manual, without which it would not have been possible to bring out this Manual.

We are grateful to Dr Bhushan Patwardhan, Director, I-AIM for the facilities and support provided for publishing this Manual.

Our sincere gratitude is also extended to Shri Darshan Shankar, Vice-Chairman, I-AIM for conceptualising the use of medicinal plants for landscaping. This Manual is a result of this initial idea. We also thank him immensely for his continued guidance and support during preparation of the Manual.

Our heartfelt gratitude is extended to Shri D.K. Ved, IFS, Advisor, I-AIM for his constant support and motivation.

We gratefully acknowledge the financial support received from the Ministry of Environment and Forests, Government of India for establishing thematic gardens at I-AIM and also for preparation of this Manual under the Centre of Excellence programme.

The critical comments of Prof. Premananda Das, The Science Foundation for Tribal & Rural Resource Development, Ms Poornima, Head Architect, National Centre for Biological Sciences, Ms Nina Chandavarkar, OlKOS, Mr Narendran, Prakruti Creations and Mr Ramkumar, Our Native Village Eco-Resort have helped us immensely in putting together the Manual in the present form. We have great pleasure in thanking them.

We are also thankful to Mr B.S. Somashekhar, Assistant Director, I-AIM and Dr Amitha Kaushal, Editor, Heritage Amruth for their efforts in reviewing the Manual.

We wish to acknowledge Dr G.S. Goraya, IFS, CCF Shimla, Himachal Pradesh, Dr K. Ravikumar, Asst. Director, I-AIM and other inhouse botanists for their continuous support with regard to collection of plant material and other inputs for the garden at I-AIM.

We sincerely acknowledge Dr Abdul Kareem, Asst. Director, I-AIM and Mr Cyril Rufus, Environment Education Co-ordinator, Peechandikulam Forest Consultants, Adayar Poonga Project, Chennai for their inputs for the chapter on Signage and Education Material.

We extend our sincere thanks to all our colleagues in I-AIM for their support and help.

The first author wishes to express his heartfelt gratitude to his teachers Prof John Jeberaj and Prof D Winfred Thomas of the American College, Madurai, Prof Navneetha Krishnan, School of Nuclear Physics, Madurai Kamaraj University and Ms Ida Mercy Sudantira, Schwarts Higher Secondary School, Ramnad for their encouragement.

We express our gratitude to Trapeze for helping us design the Manual and Akshara Graphics for printing it.

### **FOREWORD**



India is endowed with rich medical heritage since ancient times. A large part of our population accesses their health care through native medical practices. More recently there has been a resurgence of these traditional systems of medicine; mainly due to knowledge about the limitations of the modern system, and also due to the world awakening to and accepting the holistic approach of these traditional systems. The benefits of the holistic approach of our traditional system can favourably contribute to the pluralistic medical need that is going to be the nature of healthcare in future.

Indian systems of medicine like Ayurveda, Siddha, Unani and folk stream heavily depend on medicinal plants, which are generally gathered from the wild. Large scale collection and

unsystematic exploitation has led to peril of many plants. Similarly, enhanced collection and trade, more recently, has also resulted in depletion of resources. Inevitably this huge demand has resulted in a need to augment the resource and create mass awareness. One of the means for this is through herbal gardens.

India has a rich tradition of cultivation and gardening from prehistoric times. Our Vedic literatures too speak on the qualities and use of specific plants to the extent that few of them are worshiped to alleviate problems and to ensure well being. There are plants associated with different rituals and functions prescribed by our classic texts. Similarly, there are medicinal plants for certain thematic treatments of human diseases and also health promotion. Taking advantage of the traditional knowledge, this institute has established one of the best thematic ethno medicinal gardens, catering to education, conservation and utilization, with the financial support from Ministry of Environment and Forests. It is possible to replicate such a garden elsewhere in the country to represent the ecosystem specificity and regional/ phytogeographical representation.

'Secrets of EthnoMedicinal Garden' is an easy to follow Manual which will help anybody to replicate the EMG of I-AIM. The Manual, which is brought out with support from the Ministry of Environment and Forest, is divided into two sections – one on setting up a garden and the other on setting up a nursery. The first section gives various details such as habit, characteristics, medicinal uses, etc. of various plants, along with colourful photographs, in addition to giving assistance on how they can be used as various landscape elements. The second section deals with propagation techniques and setting up a state of the art medicinal plant nursery.

It is hoped that this book will be well received by all stake holders and encourage garden lovers to grow medicinal plants and thereby preserve our medical heritage. I congratulate the team for bringing out this user friendly publication.

Prof Bhushan Patwardhan

Belin

Director

I-AIM



राज्य मंत्री (स्वतंत्र प्रमार)
पर्याचरण एवं वन
भारत सरकार
वई दिल्ली-110003
MINISTER OF STATE (INDEPENDENT CHARGE)
ENVIRONMENT & FORESTS
GOVERNMENT OF INDIA
NEW DELHI - 110 003

जयराम रमेश JAIRAM RAMESH

14th December, 2010



It gives me immense pleasure to introduce this manual, which is an outcome of an extremely important study on medicinal plants by the Institute of Ayurveda and Integrative Medicine, with the support from the Ministry of Environment and Forests. My Ministry, entrusted this important task of understanding native medicinal plants, given that India has 7-8% of the world's floral and faunal diversity, with more than 45,000 plant species.

Over the several centuries, various ethnic communities living closely with nature have mastered the art of effectively using medicinal plants as resources for their health and well being. It, is in this context that I believe, that we need to have robust scientific and holistic documentation in order that we justly recognise, nurture and utilize the incredible

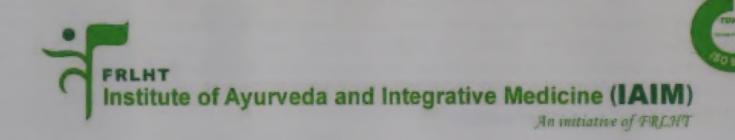
benefits we accrue from the derivatives of medicinal plants. The Institute of Ayurveda and Integrative Medicine has done just that, whereby landscapes have been designed using medicinal plants to rightly bring attention to this invaluable resource.

With an easy-to-follow user manual, on how to landscape a garden using native medicinal plants, I am confident that this manual will not only be useful to the scientific community but to our society as a whole. I am confident that this will be a useful tool to impart cultural education about our native medicinal plants and I do hope that this will result in a complete series of publication which can be translated into actionable interventions for our society.

I hope that this publication will be a grand success.

man Ramelle

Jairam Ramesh



22nd December, 2010

It is evident that landscapers, heads of institutions and garden managers are not sufficiently aware that one can landscape a garden with due regard for aesthetics, entirely with native flora. One need not have a fetish for native plants; one could opt for exotics, if there is indeed a scarcity in terms of diversity of life forms with visual appeal, in respect of native plants. However, as any Indian botanist and ecologist knows, this is not the case in respect of India's floral wealth, which has huge diversity in all its different bio-geographic zones.

This book is titled 'Secrets of Ethno Medicinal Gardens'. I believe this title is merely to provoke the reader to look more closely into Indian plant life. It is no secret that our country has a wide range of plant forms and groups viz; grasses, ferns, orchids, pteridophytes, gymnosperms and angiosperms which are available to anyone seeking to discover aesthetics and form in plant life.

The reader may wonder, why should one choose medicinal plants for gardening and landscaping? Firstly because, they are not exclusive. So far as the Indian mind is concerned "every plant is potentially medicinal" because it has properties (guna) and therefore biological action (karma). It is, however, declared to be medicinal when its properties and actions are actually discovered and used. The medicinal uses of about 60% of India's flora have already been found out by the ethnic communities and traditional physicians of India. That is why medicinal plants constitute such a large sub-sect of plant diversity, in all our eco-systems and are eminently suitable for landscaping because of their biological, cultural and aesthetic values.

This manual is a work of love and experience in gardening. Please enjoy it and use it - The secret of gardens is now yours.

Padmashri Darshan Shankar

Johnson

Advisor I-AIM

### CONTENTS

### SETTING UP A GARDEN

	12	History Of Gardens
	15	EthnoMedicinal Garden
	19	Planning A Garden
	36	Garden Layouts & Designs
	41	Showcase
	47	Habits & Behaviour In Designing A Garden
	117	Landscape Elements
	124	Garden Management
	128	Signage & Education Materials
E	ETTING L	JP A NURSERY
	135	Guidelines For Setting Up A Nursery
	141	Propagation Materials
	145	Nursery Management
	149	Propagation Methods For Selected Species
	155	Do's & Don'ts For Efficient And Sustainable Nursen
	157	Annexure I
	159	Annexure II
	182	References
	10/	Index

# Show me your garden and I shall tell you what you are

Alfred Austin



🕆 History Of Gardens 🗅 EthnoMedicinal Garden 🗢 Planning A Garden 🗢 Availability Chart Of Species & Garden Layouts & Designs & Showcase & Habits & Behaviour In Designing A Garden 🗈 Landscape Elements 🛊 Garden Management 🗈 Signage & Education Materials



### HISTORY OF GARDENS

★ An Introduction to the concept of gardens and for creating more useful gardens

Gardening has been popular in India from ancient times. Gardens were an indispensable feature in house and town planning. Incorporating various design forms and mechanisms and also combining scientific and artistic principles ensured integration of nature with everyday life in urban areas. Vedic and post-Vedic manuscripts on subjects like Vrikshayurveda, for example Upavana Vinoda give descriptions of beautiful gardens and also their maintenance.

Gardening is considered as an amenity of civilized life. The earliest gardens were grown for daily needs such as for vegetables, flowers, fruits, medicines and so on. Later gardening became a means of expressing style, social status, and often philosophy and religion. In India gardening has been practiced since the Vedic period. In the Rigveda mention is made on gardens that were dedicated to public use. The Ramayana and the Mahabharatha describe several trees such as 'ashoka' (Saraca asoca), 'arjuna' (Terminalia arjuna), 'nagakesara' (Mesua ferrea), 'vatavriksha' (Ficus benghalensis), 'ashvatha' (Ficus religiosa), 'champaka' (Michelia champaca), 'palasah' (Butea monosperma) and 'aragvadha' (Cassia fistula). The Ashokavana in Ramayana has been described as a sylvan grove with the 'saala' (Shorea robusta), 'ashoka' (Saraca asoca), 'bhavya' (possibly Dillenia indica, Garcinia xanthochymus or Litsea chinensis), 'champaka' (Michelia champaca), 'uddalaka' (possibly Bauhinia variegata, Cordia dichotama, C. wallichii or Paspalum scrobiculatum), 'naagara' (possibly Flacourtia cataphracta or Zingiber officinale) and the mango (Mangifera indica). In fact, evidences of the Ashokavana still exist in a place called Nuwara Elia in Sri Lanka, where one can also see a temple dedicated to Sita, Rama and Lakshman. Vatsyayan's Kamasutra describes a typical house as having a garden. Further, it says, the mistress of the house is the caretaker of homestead gardens. She is required to procure seeds of vegetables and medicinal plants and sow them in the garden. It is also necessary for the garden to have plants with sweetscented flowers like 'mallika' and 'navamalika' (Jasminum spp.), beautiful flowers like 'kurantaka' (Barleria spp.) 'japa' (Hibiscus rosa-sinensis) and shrubs yielding fragrant roots and leaves like 'balaka' (possibly Plectranthus vettiveroides or Valeriana hardwickii) and 'usir' (Vetiveria zizanioides). The plants mentioned in these gardens possess high medicinal value and are used till today. However, physical evidences of these gardens have not survived from the above mentioned periods.

The earliest physical evidence of a garden has been reported from the Egyptian tomb paintings of 1500 BC. The tomb paintings of Egypt depict lotus ponds surrounded by Acacia spp. and palms. The Egyptian Gardens were enclosed by walls, inside which they grew aromatic plants, flowering and fruiting trees, vineyards, flowering plants like roses, poppies, irises, daisies and cornflowers. In most of the religions, different trees were associated with different Gods. The earliest known gardens of French monasteries were essentially herbal gardens designed to grow healing plants that could be used both by the monks and by visitors to the monastery. From the above examples, it is evident that whichever the type of garden there was a point of utility besides the scenic beauty.

The modern gardens are quite different from the earlier ones as they are considered only as functional spaces for outdoor living. The utility value of gardens has been forgotten in the name of modernism. Although the modern gardens seemingly give more importance to style and design, it is to be noted that style or design can be compatible with the utility value to any garden. Focusing largely on exotic ornamental plants to build gardens can provide satisfaction only to the aesthetic sense! Native herbal plants, on the other hand, can satisfy both aesthetics and utility. Therefore, it is necessary to incorporate native medicinal species in the garden landscape. It can help us in rediscovering the rich cultural traditions underlying the original design of gardens.

Let us start thinking of creating more useful gardens!

## Gardening requires lots of water - most of it in the form of perspiration

Lou Erickson

## ETHNOMEDICINAL GARDEN

FINOMEDICINAL GARDEN I NATIVE MEDICINAL PLANTS I EDUCATIONAL VALUE

What is EthnoMedicinal Garden?

EthnoMedicinal Garden (EMG) is a type of garden established by planting only medicinal plants that are used by the indigenous traditional systems of medicine. EMG differs from other botanical gardens in that it possesses only herbal plants.

# Every garden-maker should be an artist along his own lines

Vita Sackville-West

## PLANNING A 3 GARDEN

SELECTION OF THEMES I SELECTING AND PRIORITISING SPECIES

Anybody who wishes to establish gardens should realise that gardening is not a mere process. They should have great passion towards gardening. Therefore, gardening is often referred to as the living art form. Without passion and patience a good-looking garden cannot be established. Here are some basic guidelines to create environmentally sound gardens with native medicinal plants.

Learn it! Create it! Enjoy it!

### PREREQUISITES FOR ESTABLISHING GARDENS

### SOIL

Soil is the most important factor for establishing gardens; hence the place for setting up a garden should be selected with utmost care. Type of soil determines the type of species to be planted and ultimately the type of garden. It is common knowledge that soil is formed by weathering of rock over a long period of time. The particles formed by this weathering process are of different sizes.

Based on the size of soil particles three types of soil textures have been described. They are:

- 1. Sand size of particles 2 to 0.05 mm
- 2. Silt size of particles 0.05 to 0.002 mm
- 3. Clay size of particles less than 0.002 mm

The ratio of these different types of soil particles determines the soil type.

The site selected for gardening should preferably have good loamy soil which is at least 4 feet deep. Loamy soil is a mixture of sand and silt in the ratio 1:1. Light soils (sandy soils) can be improved by adding leaf mould and Farm Yard Manure. Hard soils (clayey soils) can be smoothened by adding red soil and black cotton soil in the ratio of 9:1. In the case of laterite and gritty soils (gravelly soils), top soil is removed, at least up to the depth of two feet and fresh top soil is added.

Based on pH, there are three types of soil, namely acidic, alkaline and neutral soils. The pH of the soil should ideally be between 6 and 7.5. Acidic soils can be corrected by adding appropriate quantity of lime, whereas alkaline soils can be improved by adding organic mulches to it. However, before undertaking any treatment the soil has to be analysed to determine its pH.

### CLIMATE

The seasonal cycles of rainfall, change in temperatures,

humidity and other factors have a major influence on which plants will thrive in the landscape. All plants prefer certain range of temperatures and moisture levels that they will grow best in. It is always better to look for the plants that are naturally adapted to the local conditions.

### TOPOGRAPHY

Topography means position of the land. Before selecting any species for garden, one should understand whether the land is situated in hill areas or in valleys or on plateau. Changes in altitude, slope and wind velocity demand species that car thrive in such conditions. Therefore, planning of garden should be in accordance with topography of the selected area.

### WATER

Regular watering is essential for gardening. Garden should be established where there is easy access to perennial water source, such as wells, tube-wells, rivers and perennial ponds and lakes.

### BASIC PRINCIPLES AND ELEMENTS OF LANDSCAPING **GARDENS**

Landscaping should be aesthetically designed based on the well-known landscaping principles such as lines, forms and structures, including features like hedges, mounds, aquation gardens, thematic gardens, green walkways, conspicuous displays of textures, colours and fragrances.

The selection of species should include all forms such a herbs, climbers, shrubs and trees. Planting large number of seasonal plants will leave the garden lifeless during rest of the year. Therefore, great planning is needed in order to ensure the beauty and style of the garden.

Here are some exercises! Work with it! Just create your plan carefully select the species that unerringly go into your themes Plant and nourish them, enjoy when they continue to blossor and grow.

### **SELECTION OF THEMES**

Thematic gardens are nothing but gardens established focusing on certain themes/titles and the relevant plants are grouped under these themes/titles. Flower gardens (only showy flowering plants are planted in this theme), herbal gardens (only herbal plants are planted in this theme), tree gardens (or Arboretum, only tree species are planted in this theme), bamboo gardens (or Bambusetum, only bamboo species are planted in this theme), Garden of ferns (or Fernery, only fern species are planted in this theme) and orchid gardens (or Orchidarium, only orchid plants are planted in this theme) are a few examples of thematic gardens. But, before selecting the themes for any garden, one should keep in mind that the themes should be relevant, contemporary and should reflect the needs of different user groups. In case of herbal gardens, themes are selected based on the appraisal of the user groups. For instance, EMG of FRLHT has selected and established three major themes based on the need of user groups and also keeping in mind the vision of FRLHT. These are:

### 1. PLANTS OF UTILITY VALUE

FRLHT strongly believes that local health traditions can be put into practice by creating awareness among the public and also by the participation of the community. Towards familiarising the plant resources that are used in our traditional systems of medicine (TSM) to the different user groups, thematic garden on plants of utility value is established. This Major theme is supplemented with various sub-themes such as Plants for Primary Health Care, Plants used in Skin & Hair Care, Plants used in Veterinary Care, Wild Edible Medicinal Plants, etc. These thematic gardens help the visitors to understand and appreciate the plants that are used in our TSM for their day-to-day utility value.

### 2. PLANTS OF CONSERVATION CONCERN

Conservation of natural resources is a basic pre-requisite for any country. However, one cannot plan or take conservation actions without knowing about the resource one has to conserve. In

India, our TSM use various natural resources such as Flora, Fauna, Metals and also Minerals. But, majority of the resources used by TSM are plants / plant parts / plant based products. It is evident that without ensuring availability of plants, practicing TSM is not possible. Many of the species used by TSM face serious threat due to heavy trade, which is leading to depletion in their population and a few are on the verge of extinction. The theme "Plants of Conservation Concern" is designed towards familiarising the plants that are under various levels of threats. There are three sub-themes included in this thematic garden, namely Endemic Medicinal Plants, Red Listed Medicinal Plants and Highly Traded Medicinal Plants. These themes illustrate the invaluable medicinal plants of our nation. The species here are tagged with different threat levels they face; such as Critically Endangered, Endangered, Vulnerable, Near-Threatened, etc. These tags alert the visitors about the depleting floral resources of our nation and thereby urge them to take part in conservation actions. Thus these theme gardens serve as tool to provide conservation education to the user groups.

### 3. PLANTS OF BOTANICAL INTEREST

Most medicinal plants are of multiple utility, apart from being useful for health care. We are also aware that due to high demand and subsequent over-exploitation, coupled with unsustainable collection methods, many species have become threatened and warrants conservation efforts.

There are also certain group of medicinal plants that arouse our curiosity and interest due to their botanical uniqueness and special adaptations. One such group is the orchids that are known for their epiphytic way of living, with special adaptations to lead the perched life. They are also popular for their exquisite flowers that last long and have thus become a craze in the floriculture world. Their peculiar floral structure, pollination mechanism, etc. are of interest to one and all. Similarly the ferns are known for their pre-historic appearance on the earth, though they lack conventional seeds. Their evergreen fronds make them ideal foliage plants for the garden. Yet another

plant group of interest is the bamboos which are the fastest growing plants. Bamboos are actually arboreal grasses, which also have the widest utility. They can be part of special features of the garden.

In addition to the above, there are unique genera, which consists of plant genera with many species that are medicinally important; plants showing specific biotic associations like host specificity, symbiosis, micro-habitat, etc., which has for example Frerea indica that needs Euphorbia neriifolia nearby for survival and plants such as Utleria salicifolia, Janakia aryalpathra and Decalepis hamiltonii invariably require rocky habitat for good growth. Another group is that which consists of plants with variation and disjunct distribution. Eg. Trees of Terminalia bellirica in South India has obovate leaves, whereas those of Northeast India has elliptic-lanceolate leaves. Aegle marmelos produces fruits of various shapes (oblong, globose, ob-globose, etc.) in different regions. Species like Catheranthus roseus and Asclepias curassavica produce two distinctly coloured flowers on different plants.

The EMG at FRLHT has specific themes on such groups to show case their gardening applications and possible value addition.

### SELECTION AND PRIORITISATION OF SPECIES

Once the selection of themes is over, we need to choose the plant species that best suit the selected themes. For example, let us work for the sub-theme "Plants for Primary Health Care" under the major theme "Plants of Utility Value". As this theme is related to the primary health complaints of humans, a check list of complaints should be prepared based on the need of the locality, i.e. the health complaints that are prevalent in the area where the garden is being established. This can be prepared by oral communication with house-holds or consulting the documents available with the Primary Health Centres (PHCs) or the Clinics and Hospitals in the locality. List of common primary health complaints is prepared based on the above information.

### FXAMPLES OF CHECK LIST OF HUMAN HEALTH **COMPLAINTS**

- 1. Fever
- 2. Cough & Cold
- 3. Joint pain
- 4. Loss of memory
- 5. General debility and
- 6. Women related complaints

These health complaints should be selected as per local needs. The next step would be enumerating species that can either prevent or cure the complaints listed above or be used as health promoters (in case of General debility).

### **EXAMPLES OF CHECK LIST OF SPECIES**

List of species used against specific complaints is prepared by referring various Books, Floras, Monographs, reliable electronic information or by documenting reliable local practices. Let us list out examples of the species used under each complaint. The lists should be adapted to different ecological regions and local knowledge of native plants and common health problems of the region in which the garder is located.

### **COMPLAINT: FEVER**

Species used

- 1. Andrographis paniculata
- 2. Tinospora cordifolia
- 3. Soymida febrifuga
- 4. Ocimum canum
- 5. Ocimum tenuiflorum
- 6. Azadirachta indica
- 7. Mollugo cerviana
- 8. Evolvulus alsinoides
- 9. Cinchona officinalis
- 10. Aconitum ferox

### COMPLAINT: COUGH & COLD

### Species used

- 1. Adhatoda zeylanica
- 2. Coleus aromaticus
- 3. Piper longum
- 4. Cymbopogon citratus
- 5. Glycyrrhiza glabra
- 6. Ocimum tenuiflorum
- 7. Zingiber officinale
- 8. Alpinia calcarata
- 9. Nardostachys jatamanshi
- 10. Saussurea lappa
- 11. Taxus wallichiana

### COMPLAINT: JOINT-PAIN

### Species used

- 1. Cardiospermum halicacabum
- 2. Vitex negundo
- 3. Delonix elata
- 4. Cassia fistula
- 5. Ruta graveolens
- 6. Plumbago zeylanica

### COMPLAINT: LOSS OF MEMORY

### Species used

- 1. Centella asiatica
- 2. Bacopa monnieri
- 3. Celastrus paniculatus

### COMPLAINT: GENERAL DEBILITY

### Species used

- 1. Withania somnifera
- 2. Sauropus androgynus
- 3. Eupatorium triplinerve
- 4. Curculigo orchioides
- 5. Mucuna pruriens
- 6. Semecarpus anacardium
- 7. Asparagus racemosus

### COMPLAINT: WOMEN RELATED COMPLAINTS

### Species used

- 1. Aloe vera
- 2. Asparagus racemosus
- 3. Hibiscus rosa-sinensis
- 4. Ipomoea mauritiana
- 5. Adenia hondala
- 6. Saraca asoca
- 7. Caesalpinia bonduc
- 8. Punica granatum
- 9. Pterocarpus santalinus
- 10. Eclipta alba
- 11. Cassia auriculata
- 12. Moringa oleifera
- 13. Pedalium murex
- 14. Pterocarpus marsupium
- 15. Ficus racemosa
- 16. Carica papaya

One should keep in mind the climate, topography, rainfall, soil types and other edaphic factors of the garden locality and also the space allotted for a thematic garden in the overall garden layout in selection of the species for various themes.



EXAMPLE OF AN EXERCISE TO LIST THE FEASIBILITIES AND THE CONSTRAINTS AGAINST EACH SPECIES WHEREVER CONSTRAINTS ARE NOTED, MARK THESE IN BOLD LETTERS TO HIGHLIGHT THE SAME.

FEVER	
	Herb. Easily available, no space constraint
Andrographis paniculata	
Tinospora cordifolia	Herb. Easily available, no space constraint
Soymida febrifuga	Tree. Not easily available, space constraint
Ocimum canum	Herb. Easily available, no space constraint
Ocimum tenuiflorum	Herb. Easily available, no space constraint
Azadirachta indica	Tree. Easily available, space constraint but important tree
Mollugo cerviana	Herb. Easily available, no space constraint, but very short living (ephemeral)
Evolvulus alsinoides	Herb. Easily available, no space constraint
Cinchona officinalis	Tree. Not easily available, will not grow in this climate
Aconitum ferox	Restricted to the Himalayas, will not grow in South climate

Note 1: In case of Azadirachta indica, though it is easily available, there is space constraint. But, it is a very noble tree and used by several communities for fever. Therefore, without Azadirachta indica, theme garden on fever cannot be complete. Hence, try to accommodate this tree species by creating space.

Note 2: Likewise, in the case of Mollugo cerviana, though it is easily available and with no space constraint, it may not be given importance as it is very short-living and keeps the space barren for most of the year. Such short-living species can be grown in pots instead of including them in thematic layouts.

COUGH & COLD	
Adhatoda zeylanica	Shrub. Easily available, no space constraint
Coleus aromaticus	Herb. Easily available, no space constraint
Piper longum	Climber. Easily available, no space constraint
Cymbopogon citratus	Herb. Easily available, no space constraint
Glycyrrhiza glabra	Restricted to Himalayas, can be grown in South climate
Ocimum tenuiflorum	Herb. Easily available, no space constraint
Zingiber officinale	Herb. Easily available, no space constraint
Alpinia calcarata	Herb. Easily available, no space constraint
Nardostachys jatamanshi	Restricted to the Himalayas, will not grow in South climate

Saussurea lappa	Restricted to the Himalayas, will not grow in South climate
Taxus wallichiana	Restricted to the Himalayas, will not grow in South climate
JOINT-PAIN	
Cardiospermum halicacabum	Climber. Easily available, no space constraint
Vitex negundo	Shrub. Easily available, no space constraint
Delonix elata	Tree with large canopy. Easily available, space constraint
Cassia fistula	Tree with medium canopy. Easily available, no space constraint
Ruta graveolens	Herb. Easily available, no space constraint
Plumbago zeylanica	Shrub. Easily available, no space constraint
LOSS OF MEMORY	
Centella asiatica	Herb. Easily available, no space constraint
Bacopa monnieri	Herb. Easily available, no space constraint
Celastrus paniculatus	Climber. Not easily available, no space constraint

GENERAL DEBILITY	
Withania somnifera	Herb. Easily available, no space constraint
Sauropus androgynus	Shrub. Easily available, no space constraint
Eupatorium triplinerve	Herb. Easily available, no space constraint
Curculigo orchioides	Herb. Easily available, no space constraint
Mucuna pruriens	Climber with irritant hairs. Easily available, no space constraint
Semecarpus anacardium	Tree. Easily available, space constraint, allergy causing
Asparagus racemosus	Climber. Easily available, no space constraint

Note 1: Most of the people are aware of the fact that Mucuna pruriens is an important climber and used for vitality But preparation of the drug is not a simple process. Moreover, its irritant hairs may keep the visitors away from this thematic layout. Hence, it is advised not to have this plant in thematic gardens. But it can be planted elsewhere, such as in the fencing.

Note 2: Semecarpus anacardium cannot be planted in a thematic garden, because it may cause allergic reactions in certain visitors. Thus, it is important that the planner has knowledge and awareness about such allergy causing plants

WOMEN RELATED COMPLAIN	NTS
Aloe vera	Herb. Easily available, no space constraint
Asparagus racemosus	Climber. Easily available, no space constraint
Hibiscus rosa-sinensis	Shrub. Easily available, no space constraint
Ipomoea mauritiana	Climber. Easily available, no space constraint
Adenia hondala	Climber. Not easily available, no space constraint
Saraca asoca	Tree with large canopy. Easily available, space constraint, very important
Caesalpinia bonduc	Extensive climber. Easily available, space constraint, very prickly
Punica granatum	Shrub. Easily available, no space constraint
Pterocarpus santalinus	Tree. Easily available, space constraint
Eclipta alba	Herb. Easily available, no space constraint
Cassia auriculata	Shrub. Easily available, no space constraint
Moringa oleifera	Tree. Easily available, no space constraint
Pedalium murex	Herb. Easily available, no space constraint
Pterocarpus marsupium	Tree. Easily available, space constraint
Ficus racemosa	Tree with large canopy. Easily available, space constraint
Carica papaya	Slender tree. Easily available, no space constraint

Note: Caesalpinia bonduc as in the case of Mucuna pruriens.

ONCE THE FEASIBILITIES AND CONSTRAINTS ARE WRITTEN, STRIKE OUT THE SPECIES THAT, YOU FEEL, CANNOT BE PLANTED IN THIS THEMATIC GARDEN

### PRIORITY LIST

FEVER	
Andrographis paniculata	Herb. Easily available, no space constraint
Tinospora cordifolia	Herb. Easily available, no space constraint
<del>Soymida febrifuga</del>	Tree. Not easily available, space constraint
Ocimum canum	Herb. Easily available, no space constraint
Ocimum tenuiflorum	Herb. Easily available, no space constraint
Azadirachta indica	Tree. Easily available, space constraint but important tree
Mollugo cerviana	Herb.Seasonal, no space constraint, but very short living
Evolvulus alsinoides	Herb. Easily available, no space constraint
Cinchona officinalis	Tree. Not easily available, won't grow in this climate
Aconitum ferox	Restricted to the Himalayas, will not grow in South climate
COUGH & COLD	
A -llto-do -covianico	Shrub, Fasily available, no space constraint

COUGH & COLD	
Adhatoda zeylanica	Shrub. Easily available, no space constraint
Coleus aromaticus	Herb. Easily available, no space constraint
Piper longum	Climber. Easily available, no space constraint
Cymbopogon citratus	Herb. Easily available, no space constraint
Glycyrrhiza glabra	Restricted to Himalaya, can be grown in South climate
Ocimum tenuiflorum	Herb. Easily available, no space constraint
Zingiber officinale	Herb. Easily available, no space constraint
Alpinia calcarata	Shrub. Easily available, no space constraint
Nardostachys jatamanshi	Restricted to the Himalayas, will not grow in South climate
<del>Saussurea lappa</del>	Restricted to the Himalayas, will not grow in South climate
Taxus wallichiana	Restricted to the Himalayas, will not grow in South climate

JOINT-PAIN	
Cardiospermum halicacabum	Climber. Easily available, no space constraint
Vitex negundo	Shrub. Easily available, no space constraint
<del>Delonix elata</del>	Tree with large canopy. Easily available, space constraint
Cassia fistula	Tree with medium canopy. Easily available, no space constraint
Ruta graveolens	Herb. Easily available, no space constraint
Plumbago zeylanica	Shrub. Easily available, no space constraint
LOSS OF MEMORY	
Centella asiatica	Herb.Easily available, no space constraint
Bacopa monnieri	Herb. Easily available, no space constraint
<del>Celastrus paniculatus</del>	Climber. Not easily available, no space constraint
GENERAL DEBILITY	
Withania somnifera	Herb. Easily available, no space constraint
Sauropus androgynus	Shrub. Easily available, no space constraint
Eupatorium triplinerve	Herb. Easily available, no space constraint
Curculigo orchioides	Herb. Easily available, no space constraint
Mucuna pruriens	Climber with irritant hairs. Easily available, no space constraint
Semecarpus anacardium	Tree. Easily available, space constraint, allergy causing
Asparagus racemosus	Climber. Easily available, no space constraint

WOMEN RELATED COMPLAIN	
Aloe vera	Herb. Easily available, no space constraint
Asparagus racemosus	Climber. Easily available, no space constraint
Hibiscus rosa-sinensis	Shrub. Easily available, no space constraint
lpomoea mauritiana	Climber. Easily available, no space constraint
Adenia hondala	Climber. Not easily available, no space constraint
<del>Saraca asoca</del>	Tree with larger canopy. Easily available, space constraint
<del>Caesalpinia bonduc</del>	Extensive climber, available, space constraint, very prickly
Punica granatum	Shrub. Easily available, no space constraint
Pterocarpus santalinus	Tree. Easily available, space constraint
Eclipta alba	Herb. Easily available, no space constraint
Cassia auriculata	Shrub. Easily available, no space constraint
Moringa oleifera	Tree. Easily available, no space constraint
Pedalium murex	Herb. Easily available, no space constraint
Pterocarpus marsupium	Tree. Easily available, space constraint
Ficus racemosa	Tree with larger canopy. Easily available, space constraint
Carica papaya	Slender tree. Easily available, no space constraint

### WORKABLE LIST

ONCE THE EXERCISE ON SELECTION AND PRIORITIZATION OF SPECIES IS COMPLETED, WE OBTAIN THE WORKABLE LIST OF THE SUITABLE SPECIES FOR THE THEMATIC GARDEN FOR PRIMARY HEALTH CARE.

FEVER	
Andrographis paniculata	Herb. Easily available, no space constraint
Tinospora cordifolia	Herb. Easily available, no space constraint
Ocimum canum	Herb. Easily available, no space constraint
Ocimum tenuiflorum	Herb. Easily available, no space constraint
Azadirachta indica	Tree. Easily available, space constraint but important tree
Evolvulus alsinoides	Herb. Easily available, no space constraint
COUGH & COLD	
Adhatoda zeylanica	Shrub. Easily available, no space constraint
Coleus aromaticus	Herb. Easily available, no space constraint
Piper longum	Climber. Easily available, no space constraint
Cymbopogon citratus	Herb. Easily available, no space constraint
Glycyrrhiza glabra	Restricted to Himalaya, can be grown in South climate
Ocimum tenuiflorum	Herb. Easily available, no space constraint
Zingiber officinale	Herb. Easily available, no space constraint
Alpinia calcarata	Shrub. Easily available, no space constraint
JOINT-PAIN	
Cardiospermum halicacabum	Climber. Easily available, no space constraint
Vitex negundo	Shrub. Easily available, no space constraint
Cassia fistula	Tree with medium canopy. Easily available, no space constraint
Ruta graveolens	Herb. Easily available, no space constraint
Plumbago zeylanica	Shrub. Easily available, no space constraint

Herb. Easily available, no space constraint  Herb. Easily available, no space constraint
Herb. Easily available, no space constraint
Herb. Easily available, no space constraint
Shrub. Easily available, no space constraint
Herb. Easily available, no space constraint
Herb. Easily available, no space constraint
Climber. Easily available, no space constraint

WOMEN RELATED COMPLAIN	TS CONTRACTOR OF THE CONTRACTO
Aloe vera	Herb. Easily available, no space constraint
Asparagus racemosus	Climber. Easily available, no space constraint
Hibiscus rosa-sinensis	Shrub. Easily available, no space constraint
Ipomoea mauritiana	Herb. Easily available, no space constraint
Punica granatum	Shrub. Easily available, no space constraint
Eclipta alba	Herb. Easily available, no space constraint
Cassia auriculata	Shrub. Easily available, no space constraint
Moringa oliefera	Tree. Easily available, no space constraint
Pedalium murex	Herb. Easily available, no space constraint
Carica papaya	Slender tree. Eeasily available, no space constraint

At the end of this exercise, we have the species suitable for the thematic garden of plants for primary health care. Likewise one can prepare the suitable list of various themes by following this exercise.

### AVAILABILITY CHART OF PRIORITY SPECIES

Preparation of availability chart helps in planning collection tours and thereby facilitates easy access of species that are being planned to be planted in the garden. In certain cases, one cannot skip over any species just because it is not available easily. For example, if anybody wants to develop a thematic garden on Red Listed medicinal plants, almost all the species included in the theme will be rare in nature. In this case, the garden manager is advised to collect the data pertaining to each species and prepare the availability chart as shown below.

SI. No.	Name of the species	Global	Karnataka	Kerala	Tamil Nadu	Available
1	Adenia hondala		VU	VU	NT	Western Ghats
2	Adhatoda beddomei	CR				Ginji Hills
3	Amorphophallus paeoniifolius		DD	NT	VU	Western Ghats
4	Aristolochia tagala		VU	LC	DD	Western Ghats
5	Artocarpus hirsutus	VU				Western Ghats
6	Baliospermum montanum		VU	VU	DD	Western Ghats
7	Canarium strictum		VU	VU	VU	Western Ghats & NE India
8	Celastrus paniculatus		NT	VU	NT	South India
9	Chonemorpha fragrans		EN	VU	DD	Western Ghats
10	Commiphora wightii		NE	NE	NE	Rajasthan & Gujarat
11	Coscinium fenestratum		CR	CR	CR	Western Ghats
12	Curcuma pseudomontana	VU				Western Ghats
13	Cycas circinalis		CR	VU	CR	Western Ghats
14	Decalepis hamiltonii	EN				Eastern Ghats
15	Dysoxylum malabaricum	EN				Western Ghats
16	Embelia ribes		VU	NT	VU	Western Ghats & Arakku valley
17	Embelia tsjeriam-cottam		VU	VU	VU	Western Ghats & Eastern Ghats
18	Garcinia gummi-gutta	NT				Western Ghats
19	Garcinia indica	VU				Western Ghats
20	Garcinia morella		VU	NT	VU	Western Ghats

SI. No.	Name of the species	Global	Karnataka	Kerala	Tamil Nadu	Available
21	Gardenia gummifera	VU				Deccan
22	Gloriosa superba		VU	VU	LC	All forests
23	Gymnema khandalense	EN				Western Ghats
24	Hedychium coronarium		NT	NT	LC	Western & Eastern Ghats
25	Holostemma ada-kodien		VU	EN	NT	Deccan & Western Ghats
26	Hydnocarpus macrocarpa	EN		 		Western Ghats
27	Janakia arayalpathra	CR				Southern Western Ghats
28	Kaempferia galanga		EN	EN	EN	Western Ghats
29	Kingiodendron pinnatum	VU				Western Ghats
30	Knema attenuata	NT		V		Western Ghats
31	Madhuca insignis	EX	4			Western Ghats
32	Madhuca neriifolia		VU	LC	LC	Western Ghats
33	Moringa concanensis		NE	NE	LC	Deccan
34	Myristica dactyloides		VU	VU	LC	Western & Eastern Ghats
35	Myristica malabarica	VU		8		Western Ghats
36	Nervilia aragoana		NT	VU	EN	Western Ghats
37	Nilgirianthus ciliatus	EN				Western Ghats
38	Nothapodytes nimmoniana		EN	VU	VU	Western Ghats
39	Ochreinauclea missionis	VU				Western Ghats
40	Operculina turpethum		VU	EN	NT	East Coast
41	Oroxylum indicum		VU	EN	DD	Western & Eastern Ghats, tropica Himalayas and NE India
42	Persea macrantha	,	EN	VU	EN	Western & Eastern Ghats
43	Piper longum		NE	NT	EN	Western Ghats
44	Piper mullesua		VU	NT	VU	Western Ghats & NE India
45	Piper nigrum		, NT	LC	NT	Western Ghats

SI. No.	Name of the species	Global	Karnataka	Kerala	Tamil Nadu	Available
46	Pseudarthria viscida		VU	VU	NT	All forests
47	Pterocarpus santalinus	EN				Andhra Pradesh
48	Pueraria tuberosa		CR	VU	VU	Deccan & Western Ghats
49	Rauvolfia serpentina		EN	EN	EN	Western Ghats & Eastern Ghats
50	Rhaphidophora pertusa		VU	LC	NT	Western Ghats & Eastern Ghats
51	Santalum album		VU	EN	EN	Deccan
52	Shorea tumbaggaia	CR				Tirupati, Andhra Pradesh
53	Tinospora sinensis		VU	NT	NE	Western Ghats & Eastern Ghats
54	Trichopus zeylanicus subspecies travancoricus	EN				Southern Western Ghats
55	Utleria salicifolia	CR				Southern Western Ghats
56	Vateria indica	VU				Western Ghats

Key: CR - Critically endangered, DD - Data deficient, EN - Endangered, EX - Extinct, LC - Least concern, NT - Near extinct, VU - Vulnerable

If the availability chart also carries the information on phenology (season of flowering and fruiting), it will help the gardener to know about the season of flowering and seed set for those species that cannot be propagated through vegetative means. It will, in turn, make plant collectors more focused in planning collection tours and they will be able to collect viable seeds (without missing the season).

## The greatest gift of the garden is the restoration of the five senses

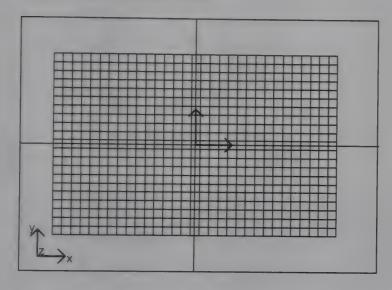
Hanna Rion

### GARDEN LAYOUTS & DESIGNS

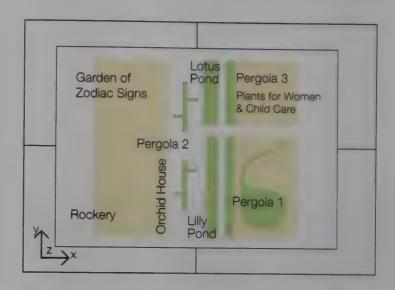
★ CHOOSING A SITE I WORKING WITH PLANTS I PLANTING APPROPRIATE SPECIES

Like any form of art, designing a garden also requires certain skills, but there are no fixed rules in it. The first step towards designing a garden is to examine the chosen site critically and then design the layout so that the natural contours of the site are accommodated without much change. The choices of design and layout are varied. The only limitation is ones imagination!

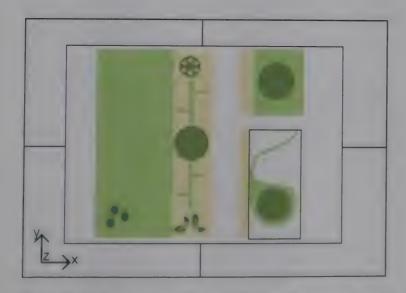
### STEP ONE: CHOOSE A SITE



1. Once you have chosen a site, measure the length and width of the area you wish to establish garden. Take a piece of graph paper and draw and determine the limits of your garden in all directions.



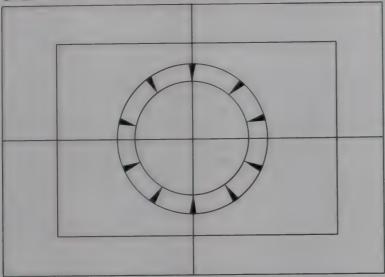
2. List the major features you have decided upon such as themes, pergolas, lawn, paths, etc. on the graph sheet.



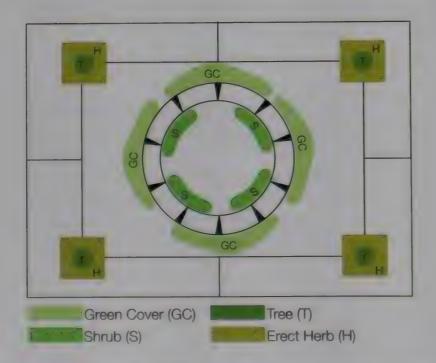
3. Give an appropriate outline to all the features you have selected and draw it to scale on the graph sheet.

Now, you have comfortably accommodated the major features in the graph. But key planning is required when you are working with plants. You have to select specific areas for various types of habits such as trees, shrubs, climbers and herbs. But do not group the garden habit-wise, as such grouping will not give the lovable levels within theme gardens. So, plan the space by spreading the habits throughout the garden.

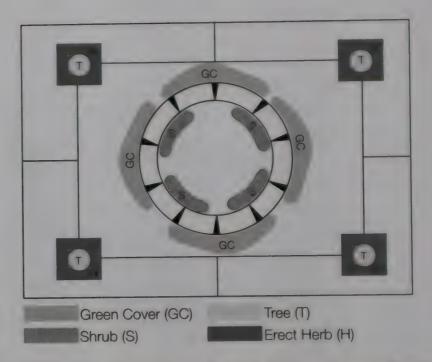
STEP TWO: WORKING WITH PLANTS



1. Use different graph papers for planning of each sub-theme . First of all, mark the centre of attraction of the particular subtheme chosen. Let us consider, as in this case, a traditional over-head pergola. Mark it on the graph sheet.



3. Differentiate between habits by using various colours as shown in the above figure.



2. Then, demarkate space for each and every species (keeping in mind its habit) radiating from the centre of the pergola as shown in the above figure. Use not only the regular shapes but also irregular shapes.

### PLANT THE APPROPRIATE SPECIES IN EACH BLOCK

Again, great thinking is needed while accommodating each species. Trees should be planted keeping in mind their canopy cover, girth of trunk, spread of root-system, etc. If ground cover or herbs are to be planted around a tree species, the herbaceous species selected should be shade-tolerant or semi-shade loving. Also, the tree species should not have any antagonistic effect (preventing the growth of other species) on the herbaceous species planted underneath. Specific microhabitats can be created for any species, to increase the beauty of a garden. For instance, *Aloe vera*, *Cissus quadrangularis* and

Kalanchoe pinnata, when grouped under a single theme, can be planted by creating rocky micro-habitat within the thematic layout. Grouping plants (within a single theme) by micro-habitats will make the garden more alive. When a garden is created with rockery, water body, pegged and hanging wooden logs all within a single theme or sub-theme, it becomes lovable for ever.

### STEP THREE: STAGES OF DEVELOPMENT







An optimistic gardener is one who believes that whatever goes down must come up

Leslis Hall

### 5 SHOWCASE

♣ Overview of some of the gardens established by FRLHT















# A garden is never so good as it will be next year

Thomas Cooper

## HABITS & BEHAVIOUR IN DESIGNING A GARDEN

SHRUBS I CLIMBERS I TREES I HERBS I ORCHIDS I FERNS I BAMBOOS

A garden has to be designed keeping in mind the various habits of plants like herbs, shrubs, climbers and trees and also the growth behaviour of each plant; this is in addition to planning the overall theme of the garden. One should understand that each group of plant has something special to offer, by way of its uniqueness, to a garden. Knowing the basic qualities of each group helps a gardener in deciding which plant has to be planted in a particular part of the garden.

### SHRUBS

Shrubs are the most beautiful element of the garden landscape when they are planted sensibly. Shrubby plants can keep the garden radiant and colourful throughout the year. Undoubtedly, shrubs that do not require routine maintenance of clipping, pruning, clearing etc. would be most lovable for any gardener.

The following are a few examples of designing a garden with shrub species.

### COSTUS SPECIOSUS



Crepe ginger is an exciting landscape plant with shining green leaves arranged on the stalk in a spiral manner. One or two crimped flowers protruding at a time from many of the dazzling red, cone-shaped inflorescence is a real treasure to watch! It is lovable when planted in the planter boxes at the entrance of an edifice. It would be an added beauty to the lush-green lawn when planted as scattered clumps. As it grows up to 7 feet tall, this can be planted as view barrier and the flowers are an added bonus. This spiral ginger is also stupendous to glimpse upon when planted along the water bodies; alternatively, the water body can be created with an amazing crepe ginger island at the centre. This plant is in peak flowering from January to April. It is a slightly hardy plant, and does well in open or partial sun in mild climates and partial shade in hot climates. It thrives in almost all light conditions. It prefers sandy loam to alluvial soils. Crepe ginger is easy to grow, with practically no pest problems. During cold or dry conditions the leaves dry down and the stems remain. Dried leaves can be removed, but pruning the stems spoils the beauty of the plant. Rhizomes are quite invasive and creep around, sending new shoots above ground. Unwanted new shoots can be removed along with the roots and can be planted elsewhere.

### PLUMBAGO SPP.



Species of Plumbago have versatile behaviour; hence they are suitable in any of the elements of landscaping such as lines forms, intermittent spheres and flowering ground waves. These fast growing plants can be used along borders and as foundation plantings. Mixture of P. zeylanica (white flowers), P. auriculati (blue flowers) and P. rosea (red flowers) renders colour mas in beds. These are also excellent background or filler plants Plumbago can be pruned as a formal hedge, or maintained a irregular clumps, which renders a spectacular wild look. Line of potted plants set in a porch or patio showers down a bed of flowers. *Plumbago* is the best aspirant for urban plantings, the blooms being extremely enjoyable at dusk. This plant is tough and drought tolerant. It can grow in poor soil; both in exposed sunny areas and partial shady conditions. It is the ideal choice if one is looking at minimum maintenance. *Plumbago* spp. flowers profusely all through the year. Heavy flowering can be seen in March and scanty flowering in mid-November. It should be pruned after flowering, preferably during winter; this helps the plant to grow bushy and also to maximize the number of flowers during the next season. A little trouble of removing old and dry stems goes a long way in keeping the plants fresh and clean. *Plumbago* is also a centre of attraction for a few species of butterflies in the garden, especially the Blue butterfly.

### BARLERIA PRIONITIS

This medium-sized spiny shrub is very hardy, drought resistant and capable of tolerating full sunlight. It thrives well in almost all types of soil. It requires moderate watering and so is a suitable choice for any garden which functions on economic use of water. It grows fast and reaches maturity within 1.5 years. It flowers usually from September to March, and during this time flowers emerge sporadically from the cone-shaped inflorescences. The beautiful orange-yellow flowers surrounded by green leafy bracts and the dark-green, shiny leaves create a wonderful colour contrast, making this a very attractive shrub. It can be planted in groups as flower zone, or to form informal borders, or as clumps on rockeries. It can also be planted in containers.

Planting intermittently in a well-maintained lawn renders an amazing look! It is again a pest free, disease-resistant shrub that can be planted in homestead gardens. As it is armed with spines, it can protect itself from grazing animals; so planting this along the fence and edges can protect the entire garden. Due to its spines it is advised not to plant it near pathways. *B. prionitis* is also one of the keystone species in attracting life into the garden, and helps in creating better natural ecosystem. Its flowers are pollinated by insects and a variety of butterflies. These insects, in turn, attract many insectivorous birds and one can enjoy the lively garden. Pruning of older branches can be done after flowering, to stimulate new growth.



### SHRUBS

### LIST OF SIGNE COMMON SHRUBS



1 Species: Abutilon hirtum
Family: Malvaceae
Used as clipped hedge: No
Medicinal uses: Cough,
diarrhoea, worm infestation



2 Species: Abutilon pannosum Family: Malvaceae Used as clipped hedge: No Medicinal uses: Piles



3 Species: Acalypha fruticosa
Family: Euphorbiaceae
Used as clipped hedge: Yes
Medicinal uses: Indigestion,
diarrhoea, food poisoning



4 Species: Adhatoda beddomer Family: Acanthaceae Used as clipped hedge: Yes Medicinal uses: Dry cough, hoarse throat, fever



Species: Adhatoda zeylanica
Family: Acanthaceae
Used as clipped hedge: Yes
Medicinal uses: Bronchial
asthma, haemorrhage, leprosy



Species: Allophylus cobbe
Family: Araceae
Used as clipped hedge: No
Medicinal uses: Piles, bleeding
nose, rheumatic pain



7 Species: Alocasia macrorhiza
Family: Araceae
Used as clipped hedge: No
Medicinal uses: Inflammation,
diseases of abdomen and spleen,
scorpion sting



8 Species: Alstonia venenata
Family: Apocynaceae
Used as clipped hedge: Yes
Medicinal uses: Insanity, epilepsy



9 Species: Anisomeles malabarica Family: Lamiaceae Used as clipped hedge: Yes Medicinal uses: Indigestion, fever accompanying teething in children



10 Species: Artemisia nilgirica
Family: Asteraceae
Used as clipped hedge: Yes
Medicinal uses: Skin diseases
Indigestion, as a tonic



11 Species: Asystasia dalzelliana Family: Acanthaceae Used as clipped hedge: Yes Medicinal uses: Swellings, worm troubles, rheumatism



12 Species: Averrhoa carambola
Family: Oxalidaceae
Used as clipped hedge: No
Medicinal uses: Asthma, jaundice
scabies, poisoning



13 Species: Baliospermum
montanum
Family: Euphorbiaceae
Used as clipped hedge: Yes
Medicinal uses: Liver disorders,
piles, blood disorders



14 Species: Bauhinia acuminata
Family: Caesalpiniaceae
Used as clipped hedge: No
Medicinal uses: Leprosy,
asthma, stone in bladder



15 Species: Bauhinia tomentosa Family: Caesalpiniaceae Used as clipped hedge: Yes Medicinal uses: Diarrhoea, digestive disorders, cough



16 Species: Bixa orellana
Family: Bixaceae
Used as clipped hedge: Yes
Medicinal uses: Diseases of
Kapha and Vata, diseases of
head.



7 Species: Buddleja asiatica Family: Buddlejaceae Used as clipped hedge: No Medicinal uses: Scanty urine formation



18 Species: Cadaba fruticosa
Family: Capparaceae
Used as clipped hedge: No
Medicinal uses: Worms, sores,
uterine problems



19 Species: Caesalpinia pulcherrima Family: Caesalpiniaceae Used as clipped hedge: No Medicinal uses: Fever. Used as purgative, tonic.



20 Species: Callicarpa tomentosa Family: Verbenaceae Used as clipped hedge: No Medicinal uses: Epilepsy, diseases of nervous system, haemorrhage,



Species: Calotropis gigantea
Family: Asclepiadaceae
Used as clipped hedge: No
Medicinal uses: Diseases
of nervous system, leprosy,
spleenic disorders



22 Species: Calotropis gigantea
var. albaFamily: Asclepiadaceae
Used as clipped hedge: No
Medicinal uses: Worm
infestation, piles, diseases of
vatam and kapham.



23 Species: Calotropis procera
Family: Asclepiadaceae
Used as clipped hedge: No
Medicinal uses: Snake and ratbite poisons, worm infestation,
cough

12-4-15 PIU



24 Species: Carissa carandas
Family: Apocynaceae
Used as clipped hedge: No
Medicinal uses: Diseases of
eye, hypertension, indigestion



25 Species: Cassia alata
Family: Caesalpiniaceae
Used as clipped hedge: No
Medicinal uses: Skin disorders,
as purgative.



26 Species: Cassia auriculata
Family: Caesalpiniaceae
Used as clipped hedge: No
Medicinal uses: Fever, diabetes,
diarrhoea.



27 Species: Cassia hirsuta
Family: Caesalpiniaceae
Used as clipped hedge: No
Medicinal uses: Disorders of
nervous system, to decrease
blood pressure



28 Species: Cestrum diurnum
Family: Solanceae
Used as clipped hedge: No
Medicinal uses: Disorders of
nervous system, antitumour,
antibacterial



29 Species: Cestrum nocturnum
Family: Solanaceae
Used as clipped hedge: Yes
Medicinal uses: Decreases
blood pressure



30 Species: Cinnamomum
zeylanicum
Family: Lauraceae
Used as clipped hedge: No
Medicinal uses: Bronchial
asthma, diseases of mouth



31 Species: Cipadessa baccifera Family: Meliaceae Used as clipped hedge: No Medicinal uses: Cobra and viper bite, to stop bleeding



Species: Citrus aurantium
Family: Rutaceae
Used as clipped hedge: No
Medicinal uses: Worms.
appetizer, tonic



33 Species: Citrus maxima
Family: Rutaceae
Used as clipped hedge: No
Medicinal uses: Epilepsy, cough

To take a femous body of head of the control of



34 Species: Clerodendrum
colebrookianum
Family: Verbenaceae
Used as clipped hedge: No
Medicinal uses; Worms



35 Species: Clerodendrum inerme Family: Verbenaceae Used as clipped hedge: Yes Medicinal uses: Fever, swelling, rheumatism



36 Species: Clerodendrum
paniculatum
Family: Verbenaceae
Used as clipped hedge: No
Medicinal uses: Cuts and
wounds



37 Species: Clerodendrum
phlomides
Family: Verbenaceae
Used as clipped hedge: Yes
Medicinal uses: Anaemia,
oedema, constipation



38 Species: Clerodendrum
serratum
Family: Verbenaceae
Used as clipped hedge: Yes
Medicinal uses: Asthma,
intermittent fever



39 Species: Clerodendrum
viscosum
Family: Verbenaceae
Used as clipped hedge: No
Medicinal uses: Diabetes,
vermifuge, skin diseases



40 Species: Costus speciosus
Family: Zingiberaceae
Used as clipped hedge: Yes
Medicinal uses: Snake-bite and
rat-bite poisonings



Species: Dodonaea viscosa Family: Sapindaceae Used as clipped hedge: No Medicinal uses: Fistula, ear diseases, poisoning



42 Species: Elettaria cardamomum Family: Zingiberaceae Used as clipped hedge: No Medicinal uses: Asthma, bronchitis, cardiac disorders.



43 Species: Eranthemum capens
Family: Acanthaceae
Used as clipped hedge: No
Medicinal uses: Cuts and
wounds



44 Species: Ervatamia divaricata
Family: Apocynaceae
Used as clipped hedge: Yes
Medicinal uses: Eye diseases,
toothache, joint pains



Species: Erythroxylum
monogynum
Family: Erythroxylaceae
Used as clipped hedge: No
Medicinal uses: Stomach
problems, fever



46 Species: Euphorbia antiquorum
Family: Euphorbiaceae
Used as clipped hedge: No
Medicinal uses: Gout, warts,
cutaneous affections



47 Species: Euphorbia neriifolia
Family: Euphorbiaceae
Used as clipped hedge: No
Medicinal uses: Scorpion-sting,
snake bite, warts



48 Species: Euphorbia nivulia
Family: Euphorbiaceae
Used as clipped hedge: No
Medicinal uses: Gout. warts
cutaneous affections, jaundice



49 Species: Euphorbia splendens
Family: Euphorbiaceae
Used as clipped hedge: Yes
Medicinal uses: Insecticide,
pesticide, fungicide, molluscicide



50 Species: Euryale ferox
Family: Nymphaeaceae
Used as: Aquatic
Medicinal uses: Tonic, sexual
disorders



51 Species: Fagraea ceilanica
Family: Logoniaceae
Used as clipped hedge: No
Medicinal uses: Headache,
fever



52 Species: Flemingia strobilifera Family: Fabaceae Used as clipped hedge: Yes Medicinal uses: Epilepsy, hysteria



53 Species: Gendarussa vulgaris (green)
Family: Acanthaceae
Used as clipped hedge: No Medicinal uses: Dry cough, hoarse throat, fever



54 Species: Gendarussa vulgaris (purple)
Family: Acanthaceae
Used as clipped hedge: Yes
Medicinal uses: Hemiplegia,
facial paralysis



55 Species: Glycosmis mauritiana
Family: Rutaceae
Used as clipped hedge: No
Medicinal uses: Liver disorders,
eczema and other skin diseases.



Species: Gmelina asiatica
Family: Verbenaceae
Used as clipped hedge: No
Medicinal uses: Cardiac
diseases, digestive disorders,
piles.



57 Species: Gossypium arboreum Family: Malvaceae Used as clipped hedge: no Medicinal uses: Skin diseases, flatulence, hallucinations



58 Species: Hibiscus Iunarifolius
Family: Malvaceae
Used as clipped hedge: No
Medicinal uses: Skin diseases



59 Species: Hibiscus rosa-sinensis (Red-flowered)
Family: Malvaceae
Used as clipped hedge: Yes
Medicinal uses: Diarrhoea.
cough, menorrhagia



60 Species: Hibiscus rosa-sinensis (White-flowered)
Family: Malvaceae
Used as clipped hedge: Yes
Medicinal uses: Irregular
menstruation, white discharge



61 Species: Ixora arborea
Family: Rubiaceae
Used as clipped hedge: Yes
Medicinal uses: Urinary
diseases



62 Species: Ixora coccinea
Family: Rubiaceae
Used as clipped hedge: No
Medicinal uses: Venereal
diseases, fever, thirst



63 Species: Janakia arayalpathra
Family: Asclepiadaceae
Used as clipped hedge: No
Medicinal uses: Stomach-ache



64 Species: Jasminum
angustifolium
Family: Oleaceae
Used as clipped hedge: No
Medicinal uses: Poisoning,
worm infestation.as emetic



Species: Jasminum sambac Family: Oleaceae Used as clipped hedge: No Medicinal uses: Diseases of nervous system, haemorrhage, eye diseases



66 Species: Jatropha curcas
Family: Euphorbiaceae
Used as clipped hedge: No
Medicinal uses: Constipation,
wounds, rat-bit poisoning



67 Species: Jatropha glandulifera Family: Euphorbiaceae Used as clipped hedge: No Medicinal uses: Constipation, wounds, eczema



Species: Jatropha gossypifolia Family: Euphorbiaceae Used as clipped hedge: No Medicinal uses: Constipation, wounds, rat-bite poisoning



69 Species: Justicia betonica
Family: Acanthaceae
Used as clipped hedge: Yes
Medicinal uses: Boils, swellings,
diarrhea



70 Species: Kleinia grandiflora
Family: Asteraceae
Used as clipped hedge: No
Medicinal uses: Constipation,
pimples



71 Species: Lawsonia inermis
Family: Lythraceae
Used as clipped hedge: Yes
Medicinal uses: Burning
sensation in feet, scabies,
ringworms



72 Species: Leea indica
Family: Leeaceae
Used as clipped hedge: No
Medicinal uses: Diarrhoea.
dysentery, colic



73 Species: Leea macrophylla Family: Leeaceae Used as clipped hedge: No Medicinal uses: Cardiac diseases, leprosy, poisoning



74 Species: Maytenus emarginata
Family: Celastraceae
Used as clipped hedge: No
Medicinal uses: Dysetery, colic
diseases, pediculi



75 Species: Mundulea sericea Family: Fabaceae Used as clipped hedge: No Medicinal uses: Fish poison



76 Species: Murraya koenigii
Family: Rutaceae
Used as clipped hedge: No
Medicinal uses: As liver tonic.to
expel worms.



77 Species: Murraya paniculata Family: Rutaceae Used as clipped hedge: No Medicinal uses: Rheumatism. cough, hysteria



78 Species: Nepenthes khasiana Family: Nepenthaceae Used as clipped hedge: No Medicinal uses: Fungicide



79 Species: Nilgirianthus ciliatus
Family: Acanthaceae
Used as clipped hedge: Yes
Medicinal uses: Neurological
disorders, toothache, skin
diseases



Species: Nyctanthes arbortristis
Family: Oleaceae
Used as clipped hedge: No
Medicinal uses: Liver disorders,
piles, worm infestation



Species: Ochna obtusata
Family: Ochnaceae
Used as clipped hedge: No
Medicinal uses: Asthma,
constipation, menstrual
complaints



Species: Opuntia dillenii
Family: Cactaceae
Used as clipped hedge: No
Medicinal uses: Whooping
cough, as a contraceptive



83 Species: Pandanus
odoratissimus
Family: Pandanaceae
Used as clipped hedge: No
Medicinal uses: Skin diseases.
sterility, gynaecological disorders



84 Species: Pavetta indica
Family: Rubiaceae
Used as clipped hedge: No
Medicinal uses: Dropsy, piles



Species: Phoenix humilis Family: Arecaceae Used as clipped hedge: No Medicinal uses: Eye diseases, digestive disorders, dysentery,



Species: Phyllanthus polyphyllus Family: Euphorbiaceae Used as clipped hedge: Yes Medicinal uses: Anti-inflammatory, anti-tumour, liver tonic



87 Species: Phyllanthus reticulatus Family: Euphorbiaceae Used as clipped hedge: No Medicinal uses: Rheumatism, dysentery, skin eruptions



Species: Pimenta officinalis Family: Myrtaceae Used as clipped hedge: No Medicinal uses: Anti oxidant. digestive



Species: Pleiospermium alatum Family: Rutaceae Used as clipped hedge: No Medicinal uses: Rheumatic pain



Species: Plumbago auriculata Family: Plumbaginaceae Used as clipped hedge: Yes Medicinal uses: Leprosy, skin diseases, dysentery



Species: Plumbago rosea Family: Plumbaginaceae Used as clipped hedge: Yes Medicinal uses: Piles, worm infestation, anaemia



Species: Plumbago zeylanica Family: Plumbaginaceae Used as clipped hedge: Yes Medicinal uses: Leprosy, skin diseases, dysentery



Species: Polyalthia korinti Family: Annonaceae Used as clipped hedge: Yes Medicinal uses: Body pain, rheumatism, breathing troubles



Species: Premna serratifolia Family: Verbenaceae Used as clipped hedge: Yes Medicinal uses: Stomachic, as carminative, antiperiodic



Species: Priva leptostachya Family: Verbenaceae Used as clipped hedge: No Medicinal uses: Inflammation of eve balls, sores, bone fracture



Species: Punica granatum Family: Punicaceae Used as clipped hedge: No Medicinal uses: Hyperacidity. cough, cardiac diseases



97 Species: Rauvolfia tetraphylla Family: Apocynaceae Used as clipped hedge: Yes Medicinal uses: Worm infestation. diseases of nervous system, poisoning.



98 Species: Rosa sericea
Family: Rosaceae
Used as clipped hedge: Yes
Medicinal uses: Insecticide



99 Species: Sauropus androgynus Family: Euphorbiaceae
Used as clipped hedge: Yes
Medicinal uses: Edible leaves
are considered as tonic.



100 Species: Sauropus
quadrangularis
Family: Euphorbiaceae
Used as clipped hedge: No
Medicinal uses: Tonsilitis



101 Species: Scaevola taccada
Family: Goodeniaceae
Used as clipped hedge: Yes
Medicinal uses: Fruits used to
make japa mala (rosary)



102 Species: Schefflera stellata
Family: Araliaceae
Used as clipped hedge: No
Medicinal uses: Dropsy



103 Species: Schumannianthus
virgatus
Family: Marantaceae
Used as clipped hedge: No
Medicinal uses: Stomachache



104 Species: Securinega leucopyrus
Family: Euphorbiaceae
Used as clipped hedge: No Medicinal uses: Dysentery, digestive disorders



105 Species: Solanum erianthum Family: Solanaceae
Used as clipped hedge: No Medicinal uses: Body pain urnary troubles, vaginal discharges



106 Species: Solanum khasianum Family: Solanaceae
Used as clipped hedge: No Medicinal uses: Anti-inflammatory, anthelmintic



107 Species: Solanum pubescens
Family: Solanaceae
Used as clipped hedge: No
Medicinal uses: Tooth-ache



108 Species: Solanum torvum
Family: Solanaceae
Used as clipped hedge: No
Medicinal uses: Liver and spleen
enlargement



109 Species: Stachytarpheta
mutabilis
Family: Verbenaceae
Used as clipped hedge: No
Medicinal uses: Cuts and
wounds



110 Species: Tamarix ericoides
Family: Tamaricaceae
Used as clipped hedge: Yes
Medicinal uses: Rich in antioxidants



111 Species: Tarenna asiatica
Family: Rubiaceae
Used as clipped hedge: Yes
Medicinal uses: Skin eruptions



112 Species: Thevetia nerifolia
Family: Apocynaceae
Used as clipped hedge: No
Medicinal uses: Rheumatism,
poinsoning, ulcers



113 Species: Thottea siliquosa
Family: Aristolochiaceae
Used as clipped hedge: No
Medicinal uses: Ulcers, snake
poisoning, leprosy, fever



114 Species: Typha angustata
Family: Typhaceae
Used as clipped hedge: No
Medicinal uses: Urinary
problems



115 Species: Utleria salicifolia
Family: Asclepiadaceae
Used as clipped hedge: No
Medicinal uses: Intestinal
complaints, bleeding due to
ulcers, asthma,



116 Species: Vitex leucoxylon
Family: Verbenaceae
Used as clipped chedge: No
Medicinal uses: Leprosy,
emetic.



117 Species: Vitex negundo var.
negundo
Family: Verbenaceae
Used as clipped hedge: Yes
Medicinal uses: Rheumatic pain,
Intermittent fever, cold.



118 Species: Vitex negundo var.
purpurescens
Family: Verbenaceae
Used as clipped hedge: Yes
Medicinal uses: Rheumatic pain.
intermittent fever



119 Species: Vitex trifolia
Family: Verbenaceae
Used as clipped hedge: Yes
Medicinal uses: Abdominal
disorders. bronchial asthma.
leprosy



120 Species: Ziziphus oenoplia
Family: Rhamnaceae
Used as clipped hedge: No
Medicinal uses: Fever retention
of urine. poisonina

### **CLIMBERS**

Adding vertical dimension to a garden along with the typical horizontal growth gives it a fresh look. This can be achieved by growing climbers. Climbers basically grow by clinging to or twining around a support. Most climbers are flowering plants, though there are ones which even lack chlorophyll. As climbers grow quickly they can be used to achieve a 'quick' garden. They can be made to grow over walls, fences, pergolas and also other plants. Climbers may be soft stemmed, called vines or woody stemmed, called lianas.

Some climbers can climb by themselves, by twining their stems around a support or by using clinging roots, tendrils, adhesive pads, twining petioles, etc. There are also scramblers which have long twining stems which cannot climb on their own and need to be tied to a support. A few climbers have been described below which can be used in increasing the attraction of a garden.

### IPOMOEA MAURITIANA



The genus Ipomoea is known for its showy habit, quick growth andeasymultiplication. I. mauritiana is an ideal and the most rewarding climber from this genus which can be used to decorate wire fences, beautify trellises and to dress up walls and pillars. It

adds a splendid vertical dimension to the garden. As it offers privacy and provides breezing shade, it can also be used as a colourful, living screen. Spill of pink flowers with shower of green foliage assigns the hanging pots a very delightful look! Planting it in a lush-green lawn as a clipped or creeping ground cover sprayed with brilliant pink flowers, brings a very pleasing sight to the lawn! It is a moderate twiner and does not require pruning. As it is a non-invasive climber, it can be planted anywhere in the garden. It blooms intermittently, throughout the year, but will be in peak flowering from May to July.

### ARGYREIA NERVOSA

As it is an extensive climber, this plant is called Elephant Creeper. It is a lovely climber with shiny stem, closely growing



leaves and large. pretty, pinkish-purple flowers. The plant is soft to touch because of the presence of hairs. velvety species enjoys warmer temperature and is tolerant of arid conditions, and so is usually planted in open sun or in partial shade. It is a fast growing

climber, reaching up to 15 m high. This heavy climber needs strong support and should not be planted along with other slender vines. Sprawling on compound walls, it gives a natural look to a house. Installing a 10 to 15 m long supporting structure in the garden and allowing this excellent climber to spread on it makes it the centre of attraction. This handsome climber can be grown on the roof top or it can be allowed to hang down from the roof to render a bright, wild look to the buildings. Further, it can be planted to cover unsightly buildings, parking areas and also to provide shade to outdoor dining spots. After the loaded lustrous bloom have fallen, dark brown berries appear with woody, persistent sepals resembling carved wooden roses, creating a gorgeous contrast of colour. These dried fruits can be exploited as excellent indoor decorators.

### PIPER LONGUM

The 'Queen of spices' demands partial shade, fairly high temperature, sufficient water and well-drained loamy soil rich



in organic matter.
Pippali can be grown all through the year and so would be a pleasing addition to the shady areas of the garden. Allowing it to spread on a low-leveled lattice would bring out its striking beauty as it bears dark-green, dense

and shiny foliage. It is very charming when grown as raised, well pruned half-spheres. It can also be grown in pots, with iron rods wrought into inverted half-egg shape for support. This climber is romantic when planted amidst attractive flowering beds. Keep in mind! This is not a twiner with strong tendrils; hence using a single wire or support rod may not be the perfect way to support it, as the dense aerial shoots often slip down.

### GYMNEMA SYLVESTRE

This demure twiner grows both in sunny and shady settings.



Growing this as an indoor plant may be a difficult task. It can be allowed to twine on wrought iron support, a fence, or any type of structure that can add style and beauty to your garden. Welldesigned trellises affixed on the wall with this lush green twiner

will provide an aesthetic look to the garden. It can also be planted in pots with diameter of over 14 inches. In the pot the

plant can be trained vertically by providing suitable support like iron rods or bamboo sticks. Hanging pots can also be used to grow this twiner, where many branchlets droop down beautifully. The potting mixture should be composed of 2 parts loamy soll, 1 part sand and 3 parts farmyard manure or vermicompost. Watering should be regular in case of potted plants; that is, at least once in a day. If it is planted directly in the soil, regular watering is needed only up to its establishment, probably for a period of 4 months. Once it starts flowering, watering can be reduced to once a week. This twiner does not need any periodical pruning as it behaves well.

### TINOSPORA CORDIFOLIA

Tinospora is a fast growing, extensive climber. It is grown



for its dense foliage. rather than its flowers. However. female plants are worth seeing during fruiting. As it is a hardy plant, it can be planted at any time of the year. Temporary supports such as sticks twines should provided for it to reach

its permanent support. Guduchi creeps up vertical as well as horizontal supports; hence it can be planted to spread on the walls or sprawl along the fence and trellises. It can also be allowed to hang-down from the roof-top. It is a beautiful climber from which aerial roots hang down. This is a deciduous climber (sheds leaves during flowering); therefore, it is better to supplement this plant with any other climber, especially when planted in front of an edifice. It is a vigorous grower and should not be allowed to grow on weak shrubs or small trees, because it can quickly swamp the host plants. It needs regular shearing when it is planted near windows; otherwise it invades windows and obstructs its space and light. Usually pruning is done once in a year, during pre-monsoon. It can be planted in any type of soil and requires watering only during dry seasons.

### CHONEMORPHA FRAGRANS



Chonemorpha fragrans or Murva is a large, woody climbing shrub, often reaches the top of the tallest trees. All parts of the plant exude milk when injured. As it is a perennial, very heavy climber, it can only be grown on stronge supports such as larger trellises, columns or can

be allowed to ramble over tall, strong trees or on the high compound walls. It is a disease-free, quick-growing, deciduous (usually sheds its leaves during winter) climber, prefering partial shade to full sun. Loamy soil is the best soil for this species. It does not thrive in poor soils. It requires less water (watering once in 3 days) once established. It flowers almost throughout the year; but profuse flowering is seen during May-July. Murva sports large clusters of exuberant blooms with delicious, rich scent that keeps the whole garden fragrant. Large, pure white, twisted-back corolla with a stunning yellow center makes this climber very attractive. Even without the flowers, this climber is eye-catching and decorates the garden fences and side walls with large shiny, velvet-hairy leaves with prominent, raised veins. The dull areas of the gardens can be converted in to highlights by planting this twiner! It can also render a great backdrop for the lawn gardens. This lovely and fragrant climber can be used to grace any part of the garden but should not be planted near the kitchen and dining hall as the seeds are tipped with copious silky hairs that are carried by winds.



### CLIMBERS

### LIST OF SOME COMMON CLIMBERS



Species: Abrus precatorius (red with black ends)
Family: Fabaceae
Type: Twiner

Medicinal uses: Diseases of pitta and kapha, leucoderma, jaundice



2 Species: Abrus precatorius (red) Family: Fabaceae Type: Twiner Medicinal uses: Diseases of pitta and kapha, leucoderma, jaundice.



3 Species: Abrus precatorius (white)
Family: Fabaceae
Type: Twiner
Medicinal uses: Diseases of pitta
and kapha, leucoderma, jaundice.



Species: Acacia caesia
Family: Mimosaceae
Type: Straggler
Medicinal uses: As soap, for
menstrual disorders, blood
pressure



Species: Acacia sinuata
Family: Mimosaceae
Type: Straggler
Medicinal uses: Constipation



6 Species: Adenia hondala Family: Passifloraceae Type: Climber Medicinal uses: Dysentery, diarrhoea, fever



7 Species: Adenia wightiana Family: Passifloraceae Type: Climber Medicinal uses: Dysentery, diarrhoea, fever



8 Species: Allamanda cathartica Family: Apocynaceae Type: Straggler Medicinal uses: Constipation



Species: Argyreia cuneata Family: Convolvulaceae Type: Straggler Medicinal uses Diabetes



10 Species: Argyreia nervosa Family: Convolvulaceae Type: Straggler Medicinal uses Cough, cardiac diseases, nervous weakness



11 Species: Aristolochia Indica Family: Aristolochiaceae Type: Twiner Medicinal uses: Snake-bite poisoning, worm infestation, fever



12 Species: Artabotrvs odoratissimus Family: Annonaceae Type: Straggler Medicinal uses Snake-bite poisoning worm infestation fever



13 Species: Aristolochia tagala Family: Aristolochiaceae Type: Twiner Medicinal uses: Diarrhoea



14 Species: Asparagus adscendens
Family: Liliaceae
Type: Straggler
Medicinal uses: Nerve tonic,
memory enhancer, anti-diabetic



15 Species: Asparagus gonoclados Family: Liliaceae Type: Twiner Medicinal uses: General debility, Increase breast milk.



6 Species: Asparagus officinalis
Family: Liliaceae
Type: Twiner
Medicinal uses: Jaundice and
other liver diseases, cardiac
problems



17 Species: Asparagus racemosus
Family: Liliaceae
Type: Twiner
Medicinal uses: General debility,
Increase breast milk.



18 Species: Basella alba
Family: Basellaceae
Type: Twiner
Medicinal uses: Flatulence,
Ulcers, cuts and wounds.



19 Species: Caesalpinia bonduc Family: Caesalpiniaceae Type: Thorny Straggler Medicinal uses: Vomiting, piles, leprosy



20 Species: Caesalpinia decapetala Family: Caesalpiniaceae Type: Thorny Straggler Medicinal uses: Antiviral, decreases blood pressure



21 Species: Capparis zeylanica
Family: Capparaceae
Type: Thorny Straggler
Medicinal uses: Cholera.
filariasis, rheumatism, arthrits



2 Species: Cardiospermum canescens
Family: Sapindaceae
Type: Climber
Medicinal uses: Diseases of Vatam, glandular swellings



23 Species: Cardiospermum
helicacabum
Family: Sapindaceae
Type: Climber
Medicinal uses: Diseases of
Vatam, glandular swellings



24 Species: Celastrus paniculatus Family: Celastraceae
Type: Straggler
Medicinal uses: Brain tonic.
stomach disorders, cough



Species: Ceropegia candelabrum
Family: Asclepiadaceae
Type: Twiner
Medicinal uses: Dyspnoea,
cardiac diseases, fever



26 Species: Ceropegia juncea
Family: Asclepiadaceae
Type: Twiner
Medicinal uses: Cold, oedema,
mental disorders



27 Species: Chonemorpha
fragrans
Family: Apocynaceae
Type: Liana
Medicinal uses: Diarrhoea, fever.

polyuria



var. hirsuta
Family: Menispermaceae
Type: Climber
Medicinal uses: Poisoning,
fever, diarrhoea.



Species: Cissus discolor Family: Vitaceae Type: Climber Medicinal uses: Kidney stones, urinary problems



30 Species: Cissus quadrangularis (4-angled stem)
Family: Vitaceae
Type: Climber
Medicinal uses: Bone fractures, venereal diseases, gout



31 Species: Cissus quadrangularis (bluntly 4-angled stem)
Family: Vitaceae
Type: Climber
Medicinal uses: Bone fractures,

venereal diseases, gout



(cylindrical stem)
Family: Vitaceae
Type: Climber
Medicinal uses: Bone fractures.
venereal diseases, gout

Species: Cissus quadrangularis



Species: Cissus quadrangularis (flat stem) Family: Vitaceae Type: Climber Medicinal uses: Bone fractures. venereal diseases, gout



34 Species: Cissus setosa
Family: Vitaceae
Type: Climber
Medicinal uses: Tumours,
extraction of guinea worms



35 Species: Clematis gauriana
Family: Rananuculaceae
Type: Climber
Medicinal uses: Fever, anaemia.
snakebite



Species: Clitoria ternatea (blue flower)
Family: Fabaceae
Type: Twiner
Medicinal uses: Leprosy, fever tuberculosis



Species: Clitoria ternatea (white flower) Family: Fabaceae Type: Twiner

Medicinal uses: Leprosy, fever,

tuberculosis



Species: Cocculus hirsutus Family: Menispermaceae Type: Twiner Medicinal uses: Syphilis, polyuria, eczema



Species: Corallocarpus epigaeus Family: Cucurbitaceae Type: Climber Medicinal uses: Dysentery,

snake bite



40 Species: Cryptolepis buchananii Family: Asclepiadaceae Type: Twiner Medicinal uses: Wounds, leprosy, jaundice



Species: Cryptostegia grandiflora Family: Asclepiadaceae Type: Twining shrub Medicinal uses: Disorders of

nervous system



Species: Cyclea peltata Family: Menispermaceae Type: Twiner Medicinal uses: Blood purification,

skin diseases, poisoning



Species: Decalepis hamiltonii Family: Asclepiadaceae Type: Straggler Medicinal uses: Diseases of

vata, pita, fever, thirst



Species: Dioscorea bulbifera Family: Dioscoreaceae Type: Twining shrub Medicinal uses: Cardiac diseases, polyuria, urinary calculi



Species: Dioscorea oppositifolia Family: Dioscoreaceae Type: Twining shrub Medicinal uses: Swellings



Species: Dioscorea tomentosa Family: Dioscoreaceae Type: Twining shrub Medicinal uses: Cardiac diseases, polyuria, urinary calculi



Species: Diplocyclos palmatus Family: Cucurbitaceae Type: Climber Medicinal uses: Aphrodisiac. tonic, constipation



Species: Embelia ribes Family: Myrsinaceae Type: Liana Medicinal uses: Anthelmintic. constipation, indigestion. flatulence



Species: Embelia tsjeriam-cottam

Family: Myrsinaceae Type: Straggler

Medicinal uses: Worm infestation;

abdominal disorders, fever



Species: Gloriosa superba Family: Liliaceae

Type: Climber

Medicinal uses: Ulcers, bleeding

piles, leprosy



Species: Gymnema sylvestre Family: Asclepiadaceae

Type: Twiner

Medicinal uses: Snake-bite poisoning, fever, wounds



Species: Hemidesmus indicus Family: Asclepiadaceae

Type: Twiner

Medicinal uses: Blood

disorders, polyuria, haemorrhage



Species: Hiptage benghalensis

Family: Malphigiaceae

Type: Liana

Medicinal uses: Diseases of pitta, poisoning, thirst



Species: Holostemma ada-54

kodien

Family: Asclepiadaceae

Type: Twiner

Medicinal uses: Burning

sensation, fever



55 Species: Ichnocarpus frutescens

Family: Apocynaceae

Type: Twiner

Medicinal uses: Disorders of blood, haemorrhage, jaundice



Species: Ipomoea batatas Family: Convolvulaceae

Type: Twiner

Medicinal uses: Diseases of vata and pitta, general debility,

scorpion-sting



Species: Ipomoea mauritiana

Family: Convolvulaceae

Type: Twiner

Medicinal uses: Tonic. constipation, intermittent fever



Species: Jasminum auriculatum

Family: Oleaceae Type: Twiner

Medicinal uses: Digestive disorders, indigestion, fever



Species: Jasminum grandiflorum

Family: Oleaceae Type: Twiner

Medicinal uses: Blood

disorders, amenorrhoea, sterility



Species: Jasminum malabaricum

Family: Oleaceae Type: Twiner

Medicinal uses: Cataract.

mental disorders



61 Species: Kedrostis rostrata
Family: Cucurbitaceae
Type: Climber
Medicinal uses: Piles, asthma



62 Species: Leptadenia reticulata
Family: Asclepiadaceae
Type: Twiner
Medicinal uses: Cardiac
diseases, fever, piles



63 Species: Momordica charantia
Family: Cucurbitaceae
Type: Climber
Medicinal uses: Diabetes,
intestinal worms, anaemia



Species: Momordica dioica
Family: Cucurbitaceae
Type: Climber
Medicinal uses: Snake-bite and
scorpion sting, piles



65 Species: Mucuna pruriens
Family: Fabaceae
Type: Twining shrub
Medicinal uses: Diseases
of pitta, worm infestation,
parkinsonism



66 Species: Mukia maderaspatana
Family: Cucurbitaceae
Type: Climber
Medicinal uses: Constipation,
tuberculosis, piles



67 Species: Operculina turpethum
Family: Convolvulaceae
Type: Twining shrub
Medicinal uses: Abdominal
disorders, constipation, worm
infestation



Species: Pachygone ovata Family: Menispermaceae Type: Twining shrub Medicinal uses: Used as vermicide and fish poison



Species: Paederia foetida
Family: Rubiaceae
Type: Twining shrub
Medicinal uses: Rheumatism,
retention of urine, inflammation

of spleen



70 Species: Passiflora edulis Family: Passifloraceae Type: Climber Medicinal uses: Asthma, hysteria. biliousness



71 Species: Passiflora foetida Family: Passifloraceae Type: Climber Medicinal uses: Asthma. hysteria, biliousness



72 Species: Pergularia daemia Family: Asclepiadaceae Type: Twining shrub Medicinal uses: Infantile diarrhoea, rheumatism, snakebite



73 Species: Piper betle
Family: Pipercaeae
Type: Climber
Medicinal uses: Fever, cardiac
diseases, diseases of throat



74 Species: Piper longum
Family: Piperaceae
Type: Climber
Medicinal uses: Distaste,
anorexia, constipation



75 Species: Piper nigrum
Family: Piperaceae
Type: Climber
Medicinal uses: Asthma, fever,
cough



76 Species: Pseudarthria viscida
Family: Fabaceae
Type: Twining shrub
Medicinal uses: Asthma, cardiac
troubles, worms and piles



Species: Pterolobium hexapatalum Family: Caesalpiniaceae Type: Thorny Straggler Medicinal uses: Laxative



'8 Species: Pueraria tuberosa
Family: Fabaceae
Type: Twining shrub
Medicinal uses: Urinary
disorders, emaciation, bronchial
asthma



79 Species: Quisqualis indica Family: Combretaceae Type: Twining shrub Medicinal uses: Diarrhoea, fever, rickets



80 Species: Rosa damascena
Family: Rosaceae
Type: Thorny twining shrub
Medicinal uses: Stomacheache.
excessive thirst, fever



Species: Rubia cordifolia Family: Rubiaceae Type: Twiner Medicinal uses: Oedema. wounds. burns



82 Species: Salacia chinensis
Family: Celastraceae
Type: Climber
Medicinal uses:Diabetes, skin
diseases, liver disorders



83 Species: Sarcostemma acidum
Family: Asclepiadaceae
Type: Twining shrub
Medicinal uses: Cardiac
diseases, fever, mental disorders



84 Species: Smilax zevlanica Family: Smilacaceae Type: Climber Medicinal uses: Epilepsy venereal diseases, urinary disorders



85 Species: Solanum
seaforthianum
Family: Solanaceae
Type: Twining shrub
Medicinal uses: Amoebic
dysentery



86 Species: Thunbergia fragrans
Family: Acanthaceae
Type: Climber
Medicinal uses: Stomach
complaints



87 Species: Tinospora cordifolia
Family: Menispermaceae
Type: Twining shrub
Medicinal uses: Fever,
rheumatic pains, general debility



Species: Tinospora sinensis
Family: Menispermaceae
Type: Climber
Medicinal uses: Liver
complaints, chronic rheumatism,
muscle relaxant



Species: Toddalia asiatica var. gracilis
Family: Rutaceae
Type: Thorny Straggler
Medicinal uses: Diseases of kapham and vatam, cough



Species: Tragia involucrata
Family: Euphorbiaceae
Type: Twiner with stinging hairs
Medicinal uses: Skin eruptions,
venereal diseases, blood
impurities



91 Species: Trichosanthes palmata
Family: Cucurbitaceae
Type: Climber
Medicinal uses: Asthma,
epilepsy, leprosy



2 Species: Tylophora indica Family: Asclepiadaceae Type: Twiner Medicinal uses: Asthma, dysentery, gout



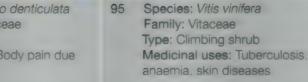
Species: Vallaris solanacea
Family: Apocynaceae
Type: Twining shrub
Medicinal uses: Diseases of
vata, leprosy, sprue



94 Species: Ventilago denticulata
Family: Rhamnaceae
Type: Liana
Medicinal uses: Body pain due

to malaria fever

The Residence of Engine A Great & Lower D. Company on Large

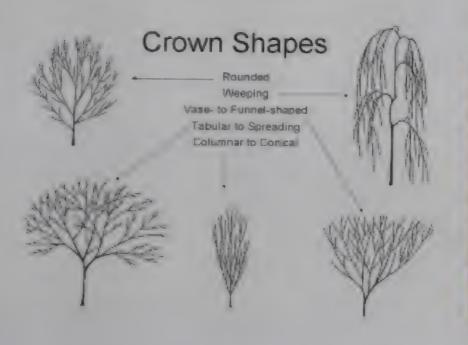




96 Species: Wattakaka volubilis
Family: Asclepiadaceae
Type: Twining shrub
Medicinal uses: Diarrhoea.
fever. anaemia

### TREES

Achieving the best looking garden lies in the selection of right kind of trees for the garden. Before planting any tree species, it is better to know their final height, size, shape of canopy, texture of trunk, because they should not take over your space and imagination, once fully grown. The selection of tree species for township gardens is more critical as most of the tree species tangle with power lines and also tend to encroach neighbour's yards. They also can hinder complete view of buildings and other landscape elements.



### Textures of trunk



The following are few examples of creating gardens with tree species.

### HOLARRHENA PUBESCENS



Small trees like H. pubescens are best suited for urban gardens, because they comply with the landscape ordinances and understand the boundaries. This tree, popularly known as Conessi tree, fits best under utility lines and does not obscure the view of a building; hence it is a brilliant patio tree. A muchbranched trunk with slightly broad crown reduces the corners of a house into a picturesque patch. The bright white flowers with sweet mild fragrance can increase the grace of a garden. Though it is of wild origin, it performs well in the urban environment. It cannot perform well under shady situations, but can tolerate full sun. This species can be planted in a continuous row, as an effective screen or tall hedge. It is a hardy plant and does well in places with water shortage. It requires no maintenance other than light pruning for shaping up. Since it produces plenty of seeds and these are carried away by wind, it is recommended not to plant this tree very near to the kitchen or dining hall.

### BOSWELLIA SERRATA



B. serrata is an important tree in tricky urban landscaping situations. Its uniform branching with round shaped, open crown is best suited for town planning. It is a wonderful tree that fares exceptionally well in dry climate and a wide variety of soil conditions. In fact, it is quite tolerant of tough sites. This plant enjoys scorching sun as well as showering clouds. Its form, colour and imposing stance makes it a wonderful choice for any type of landscape design. It fits extremely well along borders of a garden and as avenue trees. B. serrata is the best option for golf grounds and man-made savannahs. Its unique branching pattern, papery outer bark which peels off, along with smooth inner bark and leafless bloom make this tree a permanent asset to any garden. The edible seeds of this tree attract many chirping birds! Its dull, ashy-pink foliage renders cool shade and gives a brilliant forest look!

### HELICTERES ISORA



H. isora is one among the many small trees, which is strikingly beautiful and least demanding, with delightful flowers and dense foliage. The Screw tree, as it is usually known, is very versatile in its adaptability to different soils; however it prefers red loamy soil. It can be planted in full sun or in partial shade, between buildings. This plant tolerates dry and hot conditions and can, therefore, be grown in large gardens where there is less proximity to water. It is, generally, a pest- and disease-free species. It boasts of plenty of erect, scarlet flowers which are unique to look at; they look like tiny birds resting on slender branches. H. isora flowers profusely throughout the year and keeps the garden graceful always! Even a single specimen can be planted in the lawn where there is clear visibility and no dearth of space. This renders an extremely good look to the garden! This species, however, cannot be maintained as clipped hedges. Rather, it can be planted intermittently in regular or irregular rows near a path or patio which will provide a delightful look! Planting it near a water body will give an awesome reflection of its flowers in the water. This small tree is a perennial asset to the garden!

### MIMUSOPS ELENGI



Mimusops elengi (Bakul) is a medium-sized, evergreen trewhich provides an environment of calm and peace, ideal for meditation. It is also known for its medicinal and religious value in our traditional systems of medicine and culture respectively Bakul can be planted in any locality, other than water-logger areas, as it is adaptable to almost all kinds of soils, drough

heat and pollution. It can be planted in sunny localities or in partial shade between buildings. It demands no maintenance, and does not even shed the leaves as other deciduous trees do! It is not bothered by any pests or diseases. Its tall, spreading canopy and short leaders (main trunks) make it a successful avenue tree. Its evergreen, amazing, glossy foliage highlights this as wonderful shade tree. It can be used as beautiful backgrounds to enhance building designs. Bakul trees in home gardens can provide privacy, emphasize beautiful views, and screen unsightly areas. Noise from road traffic and other urban activities can be muffled by planting this along the borders; it is the best selection as sound barrier. Besides offering beauty

and shade, it is one of the trees that produce more oxygen. Planting Bakul in residential layouts will surely increase property values. Flowers are known for the pleasing aroma, so it can be planted near windows. Planting as a row in gardens will serve as decorative borders or wind screens or privacy screens. It can also be used as a stand alone or single specimen in broad lawn areas. Parks, playgrounds, avenues could be lined with Bakul trees to create peaceful, aesthetically pleasing environment. It attracts variety of birds, thus creates natural elements in the urban settings. Cool shade of bakul can be the best gathering place and provides space for outdoor activities with family and friends.



# TREES

## LIST OF SOME COMMON TREES



Species: Acacia catechu
Family: Mimosaceae
Type: Dry deciduous
Canopy: Rounded
Medicinal uses: Leprosy,
wounds, bronchial asthma



2 Species: Acacia ferruginea
Family: Mimosaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Worm
infestation, cough, giddiness



Species: Acacia leucophloea
Family: Mimosaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Fainting,
rheumatic fever, arthritis



Species: Acacia nilotica ssp. indica Family: Mimosaceae Type: Dry deciduous Canopy: Tabular to spreading Medicinal uses: Skin diseases. dysentery, pitta disorders



Species: Adenanthera pavonina Family: Mimosaceae Type: Dry deciduous Canopy: Spreading Medicinal uses: Pain in joints, warts, pulmonary infection



Species: Aegle marmelos
Family: Rutaceae
Type: Dry deciduous
Canopy: Vase shaped
Medicinal uses: Diarrhoea,
dysentery, piles



Species: Alangium salvifolium Family: Alangiaceae Type: Dry evergreen Canopy: Spreading Medicinal uses: Diarrhoea. leprosy, skin diseases



Species: Albizia amara
Family: Mimosaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Cough,
dyspnoea



9 Species: Albizia lebbeck
Family: Mimosaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Eve diseases.
wounds, poisoning



10 Species: Albizia odoratissima Family: Mimosaceae Type: Dry deciduous Canopy: Spreading Medicinal uses: Leprosy. ervsipelas, wounds



11 Species: Alstonia scholaris
Family: Apocynaceae
Type: Moist deciduous
Canopy: Rounded
Medicinal uses: Fever, leprosy,

malarial fever



12 Species: Anacardium occidentale
Family: Anacardiaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Diabetes.
poisoning, rejuvenation



13 Species: Annona squamosa Family: Annonaceae Type: Evergreen Canopy: Rounded Medicinal uses: Anaemia, cardiac diseases, cough



4 Species: Anthocephalus cadamba 15
Family: Rubiaceae
Type: Dry deciduous
Canopy: Rounded
Medicinal uses: Burning sensation



15 Species: Aquilaria malaccensis
Family: Thymelaceae
Type: Evergreen
Canopy: Rounded
Medicinal uses: Skin diseases,
rheumatoid arthritis, leprosy



16 Species: Artocarpus heterophyllus Family: Moraceae
Type: Evergreen
Canopy: Rounded
Medicinal uses: Stomachache,
liver disorders, cough



7 Species: Artocarpus hirsutus
Family: Moraceae
Type: Evergreen
Canopy: Columnar conical
Medicinal uses: Pimples, cracks
on the skin, sores



8 Species: Artocarpus lakoocha Family: Moraceae Type: Evergreen Canopy: Spreading Medicinal uses: Anorexia, eye diseases



19 Species: Atalantia monophylla
Family: Rutaceae
Type: Tropical Dry evergreen
Canopy: Vase to funnel-shaped
Medicinal uses: Chronic
rheumatism, paralysis, snakebite



20 Species: Azadirachta indica Family: Meliaceae Type: Scrub forests and cultivated lands Canopy: Spreading Medicinal uses: Leprosy



Species: Balanites aegyptiaca
Family: Balanitaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Leprosy, worm
infestation, blood purifier



22 Species: Barringtonia
acutangula
Family: Lecythadaceae
Type: Tropical Dry evergreen
Canopy: Spreading
Medicinal uses: Diarrhoea



23 Species: Bauhinia purpurea Family: Caesalpiniaceae Type: Tropical Dry evergreen Canopy: Spreading Medicinal uses: Cough bleeding piles, ulcers



24 Species: Bauhinia racemosa Family: Caesalpiniaceae Type: Tropical Dry evergreen Canopy: Spreading Medicinal uses: Urinan disorders, worm intestation



Species: Bischofia javanica Family: Euphorbiaceae Type: Moist deciduous Canopy: Spreading Medicinal uses: Throat





Species: Bombax ceiba Family: Bombacaceae Type: Evergreen Canopy: Spreading Medicinal uses: Urinary diseases, abdominal diseases



Species: Borassus flabellifier Family: Arecaceae Type: Evergreen Canopy: Palm Medicinal uses: Cardiac diseases, skin diseases, fever



Family: Burseraceae Type: Dry Deciduous Canopy: Rounded Medicinal uses: Cardiac diseases, haemorrhage, dyspnoea

Species: Boswellia serrata



Species: Butea monosperma Family: Fabaceae Type: Dry deciduous Canopy: Spreading Medicinal uses: Worm infestation, gastritis, piles



Species: Caesalpinia sappan Family: Caesalpiniaceae Type: Dry deciduous Canopy: Rounded Medicinal uses: Leucorrhoea, diphtheria



Species: Calophyllum apetalum Family: Clusiaceae Type: Evergreen Canopy: Rounded Medicinal uses: Leprosy, rheumatism, septi poison



Species: Calophyllum inophyllum Family: Clusiaceae Type: Evergreen Canopy: Rounded Medicinal uses: Rheumatism



Species: Cananga odorata Family: Annonaceae Type: Evergreen Canopy: Drooping Medicinal uses: Rheumatism. ulcer, fever



Species: Canarium strictum Family: Burseraceae Type: Moist deciduous Canopy: Rounded Medicinal uses: Rheumatism. chronic skin disorders.



Species: Canthium dicoccum Family: Rubiaceae Type: Moist deciduous Canopy: Tabular to spreading Medicinal uses: Fever



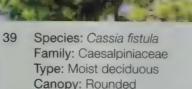
Species: Careva arborea Family: Lecythadaceae Type: Dry deciduous Canopy: Rounded Medicinal uses: Cough, cold

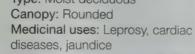


37 Species: Carica papaya
Family: Caricaceae
Type: Evergreen
Canopy: Palm
Medicinal uses: Intestinal
worms, fever, skin diseases



38 Species: Caryota urens
Family: Arecaceae
Type: Moist deciduous
Canopy: Palm
Medicinal uses: Diarrhoea,
migraine, Scorpion-sting poisoning.







Family: Caesalpiniaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Skin diseases,
as rejuvenator



Species: Cedrella toona
Family: Meliaceae
Type: Evergreen
Canopy: Spreading
Medicinal uses: Chronic dysentery
in infants, bronchitis, skin diseases



2 Species: Ceiba pentandra Family: Bombacaceae Type: Dry deciduous Canopy: Rounded Medicinal uses: Intermittent

fever, constipation



43 Species: Chloroxylon sweitenea Family: Flindertiaceae Type: Tropical Dry Evergreen Canopy: Rounded Medicinal uses: Wounds, rheumatism



44 Species: Chukrasia tabularis
Family: Meliaceae
Type: Evergreen
Canopy: Tabular to spreading
Medicinal uses: Headache,
fever, skin diseases



Species: Cinnamomum camphora
Family: Lauraceae
Type: Evergreen
Canopy: Spreading
Medicinal uses: Poisoning,
burning sensation, thirst



46 Species: Cinnamomum tamala
Family: Lauraceae
Type: Evergreen
Canopy: Vase to funnel- shaped
Medicinal uses: Cardiac disorders,
diarrhoea, inflammations



Species: Citharexylum
subserratum
Family: Verbenaceae
Type: Evergreen
Canopy: Vase to funnel shaped
Medicinal uses: Anti-inflamaton



48 Species: Citrus limon
Family: Rutaceae
Type: Evergreen
Canopy: Rounded
Medicinal uses | Iver disorders
anorexia. distaste



49 Species: Citrus medica
Family: Rutaceae
Type: Tropical Dry Evergreen
Canopy: Rounded
Medicinal uses: Abdominal
disorders, piles, dental caries



50 Species: Cocos nucifera
Family: Arecaceae
Type: Evergreen
Canopy: Palm
Medicinal uses: Urinary
disorders, gastritis, haemorrhage



51 Species: Commiphora wightii
Family: Burseraceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Brain tonic, hair
growth and to reduce cholesterol



2 Species: Cordia dichotoma Family: Cordiaceae Type: Moist deciduous Canopy: Vase to funnel- shaped Medicinal uses: Ulcers, leprosy, fever



53 Species: Cordia wallichii
Family: Boraginaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Skin diseases.
worm infestation, leprosy



54 Species: Crateva nurvala
Family: Capparaceae
Type: Moist deciduous
Canopy: Spreading
Medicinal uses: Headache.
rheumatoid arthritis



55 Species: Croton oblongifolium
Family: Euphorbiaceae
Type: Moist deciduous
Canopy: Tabular
Medicinal uses: Liver disorders.
piles, ulcers



Type: Evergreen
Canopy: Palm
Medicinal uses: Bronchial asthma,
intermittent fever, aphrodisiac

Species: Cycas beddomei

Family: Cycadaceae



57 Species: Dalbergia latifolia
Family: Fabaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Chronic ulcer
eprosy. skin diseases



58 Species: Dalbergia paniculata
Family: Fabaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Amoebic
dysentery



59 Species: Delonix elata
Family: Caesalpiniaceae
Type: Moist deciduous
Canopy: Spreading
Medicinal uses: Rheumatism,
flatulence



60 Species: Dichrostachys cinerea Family: Mimosaceae
Type: Dry deciduous
Canopy: Low-spreading
Medicinal uses: Eye diseases.
rheumatism, kidney stones



61 Species: Dillenia pentagyna
Family: Dilleniaceae
Type: Moist deciduous
Canopy: Rounded to spreading
Medicinal uses: Leucorrhoea,
cough, dysentery



62 Species: Diospyros ebenum
Family: Ebenaceae
Type: Dry evergreen
Canopy: Rounded
Medicinal uses: Boils, diarrhoea,



63 Species: Diospyros melanoxylon
Family: Ebenaceae
Type: Dry evergreen
Canopy: Rounded
Medicinal uses: Fruits are edible



54 Species: Diospyros montana Family: Ebenaceae Type: Dry evergreen Canopy: Rounded Medicinal uses: Skin troubles, diarrhoea, dyspepsia



Species: Dolichandrone
atrovirens
Family: Bignoniaceae
Type: Dry deciduous
Canopy: Rounded
Medicinal uses: Anthelmintic



66 Species: Dolichandrone falcata
Family: Bignoniaceae
Type: Dry deciduous
Canopy: Rounded
Medicinal uses: Skin diseases,
anaemia, eye disorders



67 Species: Drypetes roxburghii Family: Euphorbiaceae
Type: Dry evergreen
Canopy: Rounded
Medicinal uses: Burning sensation, thirst, constipation



68 Species: Elaeocarpus floribundus
Family: Elaeocarpaceae
Type: Evergreen
Canopy: Rounded
Medicinal uses: Cuts and
wounds, rheumatism



Species: Elaeocarpus sphaericus
Family: Elaeocarpaceae
Type: Evergreen
Canopy: Rounded to vase

Canopy: Rounded to vase Medicinal uses: Cough, boils, liver disorders



70 Species: Erythrina stricta
Family: Fabaceae
Type: Dry deciduous
Canopy: Rounded
Medicinal uses: Rheumatism,

fever, epilepsy



71 Species: Erythrina variegata
Family: Fabaceae
Type: Dry deciduous
Canopy: Rounded
Medicinal uses: Vomiting
abdominal disorders, dysentery



72 Species: Euphorbia tirucalli Family: Euphorbiaceae Type: Dry deciduous Canopy: Tabular to columnar Medicinal uses: Rheumatisn warts toothache



73 Species: Ficus amottiana
Family: Moraceae
Type: Dry deciduous
Canopy: Rounded
Medicinal uses: Skin diseases



74 Species: Ficus auriculata
Family: Moraceae
Type: Evergreen
Canopy: Rounded
Medicinal uses: Worm
infestation, diarrhea



75 Species: Ficus bengalensis
Family: Moraceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Diabetes mellitus,
erysipelas, burning sensation



Family: Moraceae
Type: Moist deciduous
Canopy: Rounded
Medicinal uses: Warts, fruits are
nutritive

Species: Ficus carica



77 Species: Ficus hispida Family: Moraceae Type: Evergreen Canopy: Spreading Medicinal uses: Leprosy, anaemia, jaundice



78 Species: Ficus microcarpa
Family: Moraceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Skin diseases,
ulcers, vaginal diseases



79 Species: Ficus mollis
Family: Moraceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Wounds



Species: Ficus racemosa
Family: Moraceae
Type: Dry deciduous
Canopy: Rounded
Medicinal uses: Constipation,
anaemia, dysentery



Family: Moraceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Ulcers, diseases
of pittam, constipation



82 Species: Filicium decipiens
Family: Filiciaceae
Type: Evergreen
Canopy: Rounded
Medicinal uses: As a fungicide,
insecticide



Species: Flacourtia cataphracta
Family: Flacourtiaceae
Type: Evergreen
Canopy: Tabular
Medicinal uses: Vitiated conditions
of pitta, diabetes, jaundice



84 Species: Garcinia gummi-gutta
Family: Clusiaceae
Type: Evergreen
Canopy: Spreading
Medicinal uses: Rheumatism,
bowel complaints



85 Species: Garcinia indica
Family: Clusiaceae
Type: Evergreen
Canopy: Vase shaped
Medicinal uses: Thirst, piles,
abdominal disorders



86 Species: Garcinia spicata
Family: Clusiaceae
Type: Dry evergreen
Canopy: Spreading
Medicinal uses: Cathartic,
cerebral congestion



Species: Garcinia xanthochymus
Family: Clusiaceae
Type: Evergreen
Canopy: Spreading
Medicinal uses: Abdominal
disorders, vomiting, piles



8 Species: Gardenia gummifera
Family: Rubiaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Abdominal
disorders, piles, venereal diseases



Species: Gardenia latifolia
Family: Rubiaceae
Type: Moist deciduous
Canopy: Rounded
Medicinal uses: Diseases of kapha
and pitta, haemorrhage, fever



D Species: Gardenia resinifera Family: Rubiaceae Type: Moist deciduous Canopy: Spreading Medicinal uses: Skin diseases



91 Species: Garuga pinnata
Family: Burseraceae
Type: Moist deciduous
Canopy: Rounded
Medicinal uses: Diseases of
Kapha, rabies



Family: Euphorbiaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Reduces blood
pressure

Species: Givotia rottleriformis



Species: Glochidion zeylanicum Family: Euphorbiaceae Type: Evergreen Canopy: Rounded Medicinal uses: Disorders of the

gastro-intestinal tract



94 Species: Gmelina arborea
Family: Verbenaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Cardiac diseases,
digestive disorders, piles



95 Species: Gyrocarpus americanus
Family: Hernandiaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Sleeping sickness



96 Species: Haldina cordifloia Family: Rubiaceae Type: Evergreen Canopy: Rounded Medicinal uses: Worm infestation, fever, leprosy



97 Species: Hibiscus tiliaceus Family: Malvaceae Type: Evergreen Canopy: Spreading Medicinal uses: Fever. skin problems, dry throat



98 Species: Hildegardia populifolia Family: Sterculiaceae
Type: Tropical Dry Evergreen
Canopy: Spreading
Medicinal uses: Piles, diabetes, skin problems



Family: Ulmaceae
Type: Tropical Dry Evergreen
Canopy: Spreading
Medicinal uses: Tuberculosis,
leprosy, purification of blood

Species: Holoptelea integrifolia



100 Species: Hopea parviflora
Family: Dipterocarpaceae
Type: Evergreen
Canopy: Spreading
Medicinal uses: Itching



101 Species: Humboldtia vahliana
Family: Caesalpiniaceae
Type: Evergreen
Canopy: Rounded
Medicinal uses: Leprosy, ulcers,
epilepsy



102 Species: Hura crepetans
Family: Euphorbiaceae
Type: Tropical Dry Evergreen
Canopy: Spreading
Medicinal uses: Leprosy,
chronic pain, as an emetic



Species: Hydnocarpus pentandra
 Family: Flacourtiaceae
 Type: Evergreen
 Canopy: Spreading
 Medicinal uses: Leprosy, chronic
ulcer, leucoderma



104 Species: Hymenodictyon orixense
Family: Rubiaceae
Type: Tropical Dry Evergreen
Canopy: Rounded
Medicinal uses: Malarial fever.
children's diseases



105 Species: Kigelia africana
Family: Bignoniaceae
Type: Evergreen
Canopy: Rounded
Medicinal uses: Liver tonic. antinflammatory. anti-microbial



106 Species: Kingiodendron pinnatum Family: Caesalpiniaceae
Type: Moist deciduous
Canopy: Rounded
Medicinal uses: Rheumatism
vaginal discharge



107 Species: Knema attenuata
Family: Myristicaceae
Type: Evergreen
Canopy: Rounded
Medicinal uses: Spleen
disorders. breathing disorders



108 Species: Lagerstroemia
microcarpa
Family: Lythraceae
Type: Moist deciduous
Canopy: Rounded
Medicinal uses: Used as timber



109 Species: Lepisanthes tetraphylla
Family: Sapindaceae
Type: Dry evergreen
Canopy: Rounded
Medicinal uses: Fruits are edible,
wood is used for house building



110 Species: Limonia acidissima Family: Rutaceae
Type: Tropical Dry Evergreen Canopy: Spreading
Medicinal uses: Cough,
bronchitis, dysentery



111 Species: Macaranga peltata
Family: Euphorbiaceae
Type: Evergreen
Canopy: Spreading
Medicinal uses: Wounds



112 Species: Madhuca longifolia
Family: Sapotaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Fever. thirst.
poisoning, ulcers



113 Species: Madhuca neriifolia
Family: Sapotaceae
Type: Moist deciduous
Canopy: Spreading
Medicinal uses: Poisoning,
leprosy, diarrhoea.



114 Species: Maesa indica Family: Myrsinaceae Type: Evergreen Canopy: Rounded Medicinal uses: Used as anthelmintic



115 Species: Mammea suriga
Family: Clusiaceae
Type: Evergreen
Canopy: Rounded
Medicinal uses: Indigestion,
piles, flatulence



116 Species: Mangifera indica
Family: Anacardiaceae
Type: Evergreen
Canopy: Spreading
Medicinal uses: Ear diseases.
urinary disorders, thirst

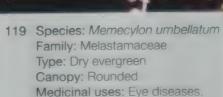


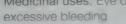
117 Species: Manilkara hexandra
Family: Sapotaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: General debility,
giddiness, aphrodisiac.



118 Species: Melia azedarach
Family: Meliaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Leprosy, blood

disorders, fever







120 Species: Mesua ferrea
Family: Clusiaceae
Type: Evergreen
Canopy: Rounded
Medicinal uses: Indiaestion
piles, vomiting



121 Species: Michelia champaca Family: Magnoliaceae Type: Evergreen Canopy: Spreading Medicinal uses: Dyspepsia, nausea, fever.



122 Species: Mimusops elengi Family: Sapotaceae Type: Moist deciduous Canopy: Rounded Medicinal uses: Uterine disorders, polyuria, leprosy.



123 Species: Mitragyna parvifolia Family: Rubiaceae Type: Dry deciduous Canopy: Rounded Medicinal uses: Gynaecological disorders, eye diseases



Family: Rubiaceae Type: Dry deciduous Canopy: Rounded Medicinal uses: Fever, ulcers.

digestive disorders

124 Species: Morinda tinctoria



125 Species: Moringa concanensis Family: Moringaceae Type: Dry deciduous Canopy: Spreading Medicinal uses: Improve appetite, epilepsy, asthma



126 Species: Moringa oleifera Family: Moringaceae Type: Evergreen Canopy: Spreading Medicinal uses: Eye diseases, earache, wounds.



127 Species: Muntingea calabura Family: Elaeocarpaceae Type:Evergreen Canopy: Spreading Medicinal uses: Cardiac diseases, blood pressure, anti-cancer



Family: Musaceae Type: Evergreen Canopy: Spreading Medicinal uses: Nervous disorders

128 Species: Musa paradisiaca

cuts and wounds, anaemia



129 Species: Nothapodytes nimmoniana Family: Icacinaceae Type: Moist deciduous Canopy: Spreading Medicinal uses: Anti tumour



130 Species: Ochreinauclea missionis Family: Rubiaceae Type: Evergreen Canopy: Rounded Medicinal uses: Skin troubles rheumatism. constipation



131 Species: Oroxylum indicum Family: Bignoniaceae Type: Moist deciduous Canopy: Spreading Medicinal uses: Ear ache. diseases of kapha, oedema



132 Species: Persea macrantha Family: Lauraceae Type: Evergreen Canopy: Rounded Medicinal uses: Asthma. rheumatism, ulcer



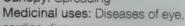
133 Species: Phoenix sylvestris Family: Arecaceae Type: Evergreen Canopy: Palm Medicinal uses: Eye diseases,

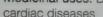


Family: Euphorbiaceae Type: Evergreen Canopy: Spreading Medicinal uses: Diaphoretic, blood clotting, piles



135 Species: Phyllanthus emblica Family: Euphorbiaceae Type: Dry deciduous Canopy: Spreading







Family: Euphorbiaceae Type: Dry deciduous Canopy: Spreading Medicinal uses: Cardiac diseases.

136 Species: Phyllanthus indo-fischeri

disorders of blood



digestive disorders, wheezing.

Species: Pinus roxburghii Family: Pinaceae Type: Evergreen Canopy: Weeping Medicinal uses: Stomach disorders, wound healing



138 Species: Pinus wallichiana Family: Pinaceae Type: Evergreen Canopy: Weeping Medicinal uses: Expectorant. bronchitis, gangrene of lungs



139 Species: Pleurostylia opposita Family: Celastraceae Type: Dry evergreen Canopy: Rounded Medicinal uses: Cuts and wounds



Family: Apocynaceae Type: Dry deciduous Canopy: Spreading Medicinal uses: Ulcers, herpes,

140 Species: Plumeria alba

scabies



Species: Plumeria rubra Family: Apocynaceae Type: Dry deciduous Canopy: Spreading Medicinal uses: Rheumatism.

ulcer. menstrual disorders



142 Species: Polvalthia longifolia Family: Annonaceae Type: Evergreen Canopy: Weeping Medicinal uses: Rheumatism. constipation, worm infestation



143 Species: Pongamia pinnata Family: Fabaceae Type: Dry deciduous Canopy: Spreading Medicinal uses: Glandular swellings, piles, worm infestation



144 Species: Prunus cerasoides Family: Rosaceae Type: Evergreen Canopy: Rounded Medicinal uses: Boils, leprosy herpes



145 Species: Prunus laurocerasus
Family: Rosaceae
Type: Evergreen
Canopy: Rounded
Medicinal uses: Blood pressure



146 Species: Psidium guajava
Family: Myrtaceae
Type: Evergreen
Canopy: Spreading
Medicinal uses: Diseases of
pitta, nausea, vomiting.



147 Species: Pterocarpus marsupium
Family: Fabaceae
Type: Dry deciduous
Canopy: Rounded
Medicinal uses: Worm infestation,
wounds, dysentery



Type: Dry deciduous
Canopy: Rounded
Medicinal uses: Skin diseases.
bone fracture, leprosy



149 Species: Pterospermum
acerifolium
Family: Sterculiaceae
Type: Dry evergreen
Canopy: Rounded
Medicinal uses: Skin diseases



150 Species: Radermachera xylocarpa
Family: Bignoniaceae
Type: Dry deciduous
Canopy: Rounded
Medicinal uses: Asthma, cough,
excessive thirst



151 Species: Salix tetrasperma
Family: Salicaceae
Type: Evergreen
Canopy: Spreading
Medicinal uses: Venereal
diseases, rheumatism, epilepsy



Family: Santalaceae
Type: Evergreen
Canopy: Rounded
Medicinal uses: Diseases of
pittam, dysuria, worm infestation

152 Species: Santalum album



153 Species: Sapindus emarginatus
Family: Sapindaceae
Type: Dry deciduous
Canopy: Rounded
Medicinal uses: Induces
/omiting, abortion and laxation



154 Species: Sapindus muckrosii
Family: Sapindaceae
Type:Evergreen
Canopy: Tabular to rounded
Medicinal uses: Epilepsy, as fish



155 Species: Schima wallichii
Family: Theaceae
Type: Evergreen
Canopy: Rounded
Medicinal uses: Cuts and
wounds, fever



156 Species: Semecarpus anacardium
Family: Anacardiaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Worm infestation
leprosy, skin diseases

poison











157 Species: Sesbania grandiflora Family: Fabaceae Type: Evergreen Canopy: Rounded Medicinal uses: Intermittent fever, night blindness

158 Species: Shorea robusta Family: Dipterocarpaceae Type: Evergreen Canopy: Rounded Medicinal uses: Dysentery, improve digestion, as aphrodisiac

159 Species: Shorea tumbaggaia Family: Dipterocarpaceae Type: Dry deciduous Canopy: Rounded Medicinal uses: As external stimulant

160 Species: Soymida febrifuga Family: Meliaceae Type: Dry deciduous Canopy: Rounded Medicinal uses: Diarrhoea. dysentery, fever







161 Species: Spondias pinnata Family: Anacardiaceae Type: Moist deciduous Canopy: Spreading Medicinal uses: General debility, thirst, tuberculosis

162 Species: Sterculia foetida Family: Sterculiaceae Type: Dry deciduous Canopy: Rounded Medicinal uses: As laxative, carminative, repellent

163 Species: Streblus asper Family: Moraceae Type: Dry Evergreen Canopy: Rounded Medicinal uses: Diarrhoea, sinusitis, elephantiasis

164 Species: Strychnos nux-vomica Family: Logoniaceae Type: Dry deciduous Canopy: Rounded Medicinal uses: Rheumatism. insomnia, anorexia









65 Species: Swietenia mahagony Family: Meliaceae Type: Evergreen Canopy: Rounded Medicinal uses: As tonic. as

antipyretic

Type: Moist deciduous Canopy: Rounded Medicinal uses: Haemorrhage, burning sensation, polyuria

166 Species: Syzygium cumini

Family: Myrtaceae

167 Species: Taxus wallichiana Family: Taxaceae Type: Evergreen Canopy: Rounded Medicinal uses: Asthma. sedative, fish poison

168 Species: Tecomella undulata Family: Bignoniaceae Type: Evergreen Canopy: Rounded Medicinal uses: Syphilis



169 Species: Terminalia arjuna
Family: Combretaceae
Type: Evergreen
Canopy: Spreading
Medicinal uses: Diabetes mellitus,

leucorrhoea, worm infestation



170 Species: Terminalia bellirica
Family: Combretaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Eye diseases,
dyspnoea, cardiac diseases



171 Species: Terminalia catappa Family: Combretaceae Type: Evergreen Canopy: Rounded Medicinal uses: Dysentery, scabies, rheumatism



172 Species: Terminalia chebula
Family: Combretaceae
Type: Dry deciduous
Canopy: Spreading
Medicinal uses: Eye diseases
dyspnoea, cardiac tonic



173 Species: Thespesia populnea
Family: Malvaceae
Type: Evergreen
Canopy: Spreading
Medicinal uses: Skin troubles,
dysentery, haemorrhoids



174 Species: Trewia nudiflora
Family: Euphorbiaceae
Type: Moist deciduous
Canopy: Spreading
Medicinal uses: Gout,
rheumatism



175 Species: Tricalysia sphaerocarpa Family: Rubiaceae Type: Dry Evergreen Canopy: Rounded Medicinal uses: Used as coffee, (Alkaloid similar to coffee)



176 Species: Vateria indica
Family: Dipterocarpaceae
Type: Evergreen
Canopy: Spreading
Medicinal uses: Eczema.
rheumatoid arthritis, diarrhea



177 Species: Vitex altissima
Family: Verbenaceae
Type: Moist deciduous
Canopy: Spreading
Medicinal uses: Indigestion.
worm infestation. leprosy



178 Species: Wrightia tinctoria
Family: Apocynaceae
Type: Dry deciduous
Canopy: Rounded
Medicinal uses: Diseases of pittam
and vatam, skin diseases, eczema



179 Species: Ximenia americana
Family: Olacaceae
Type: Dry deciduous
Canopy: Rounded
Medicinal uses: Venereal
diseases, rheumatism, dropsy



180 Species: Ziziphus mauritiana
Family: Rhamnaceae
Type: Dry deciduous
Canopy: Rounded
Medicinal uses: Diarrhoea.
dysentery, skin diseases

## **HERBS**

Herbs are very important in a landscape as they can be used in various elements, such as hedges, flower beds, spheres, walking limiters, etc.

Draw closed lines of different shapes on the ground and fill the shape with herbs of flowering and foliage plants in combination. Nourish them! Enjoy the plant beds of exotic beauty. These plant beds can be created along the pathways, in the mounds and in any open space, flat or sloping in nature. Naturally, good flowering herbs are selected for such beds as they render charming beauty. These types of flowering beds also help in attracting many pollinators, especially different varieties of butterflies.

Following are some examples of herbs used to create gardens.

#### OCIMUM SPP.



Our tradition accords great importance to Ocimum (Tulsi). It has become an integral part of our life due to its immense use besides its religious importance. Tulsi is an incomparable, omnipotent herb possessing preventive and curative ability against various health complaints such as fever, cough, cold, vomiting, diarrhoea, toothache, eye diseases, stomachache, headache, nasal discomfort, rheumatism, worms, boils, skin diseases, muscular pains, loss of appetite, indigestion, sore throat, cuts and wounds, and so on.

There are many species of Tulsi, all included under the genus

'Ocimum'. It belongs to the botanical family Lamiaceae and is commonly known as 'Basil'.

Even though Tulsi is planted in most of the houses it has been given no place in typical gardening. Most of the varieties of Tulsi can be used as landscape elements or designs. Holy tulsi (Ocimum tenuiflorum/ O. sanctum) and Camphor tulsi (O. kilimandscharicum) can be used as regular or irregular hedges. Hedges made of Purple tulsi/ Vishnu tulsi give a brilliant look to the garden. Tulsi hedges can also be created in apartment gardens by planting them close, in lengthy containers. Using Camphor tulsi as hedge along the pathways gives a stunning wild look to the garden. Long spike-like inflorescence with petite but numerous white flowers is worth-seeing. Planting Camphor tulsi near the windows brings in the pleasant aroma. Vana tulsi/ Ban tulsi (O. grattissimum) is a perennial shrub, often growing into a small tree, and can be maintained as single specimen in lawns. It is possible to clip this variety of Tulsi into attractive shapes (topiary). Bruising the leaves offers the aroma of Cinnamon, therefore It is also known as Lavang tulsi. Another interesting variety of tulsi has the smell of lemon, and is popularly known as Lemon-scentedtulsi or simply Lemon tulsi. Lemon tulsi, often planted near the cafeteria or in the kitchen garden as foliage-bed, is generally used in the preparation of herbal tea. Though it is of ephemeral nature it is self-propagating, and thereby easy to manage in a garden. Tulsi is also, often, planted to repel mosquitoes.

## HEDYCHIUM CORONARIUM



This can be planted in full sun or in partial shade conditions. Soil should be well-drained and rich with humus. It is reported that this species can thrive even in 0°-5° C; hence it can be grown

in any climatic conditions in India. This plant can be grown near the windows or as garden borders. It is best when planted near the living rooms, as the fragrance from the perfumed flowers waft-in through the windows. It can be kept on the open staircases or in decks in front of houses. It gives a stunning look when planted along lengthy water bodies. The handsome dark green foliage of this plant renders a great background to the landscape. It would also be a great addition to your aromatic collections. To contain this plant in a pot is quite difficult. However, pot of size over 24 inches with loamy compost can hold this plant for 2 years. The rhizomes should be thinned and replanted afterwards. Flowering starts in the middle of March and ends in early September. During winter, many of the aerial shoots die back to the ground exposing the stout rootstocks. Exposed root-stocks should be covered by mulching. Dried leaves, peat moss, vermi-compost or coco peat can be used for mulching. This enhances the growth of new aerial shoot buds in the rhizomes.



# HERBS

## IST OF SOME COMMON HERBS



Species: Abelmoschus ficulneus Family: Malvaceae Type: Sun loving Medicinal uses: Asthma



Species: Abelmoschus manihot Family: Malvaceae Type: Sun loving Medicinal uses: Boils, sores, sprains



3 Species: Abelmoschus
moschatus
Family: Malvaceae
Type: Sun loving
Medicinal uses: Eye diseases,
veneral diseases, diarrheoa



Species: Acalypha indica
Family: Euphorbiaceae
Type: Partial shade
Medicinal uses: Laxative, skin
eruptions, worm infestations



Species: Achyranthes aspera Family: Amaranthaceae Type: Sun loving Medicinal uses: Diarrhoea, piles, anaemia



Species: Acorus calamus
Family: Araceae
Type: Marshy Sun loving
Medicinal uses: Inflammation of
throat, piles, cold, fever.



7 Species: Aerva lanata
Family: Amaranthaceae
Type: Sun loving
Medicinal uses: Uterine
diseases, cardiac diseases,
abdominal disorders



Species: Aeschynomene aspera Family: Fabaceae Type: Aquatic Sun loving Medicinal uses: Leprosy



Species: Agave sissalana Family: Agavaceae Type: Sun loving Medicinal uses: Sexual disorders



10 Species: Alhagi pseudalhagi Family: Fabaceae
Type: Sun loving
Medicinal uses: Rheumatism, piles, as diuretic



11 Species: Allium tuberosum
Family: Liliaceae
Type: Sun loving
Medicinal uses: Sexual
disorders



12 Species: Aloe vera
Family: Liliaceae
Type: Sun loving
Medicinal uses: Abdominal
disorders, dysuria, diseases of
spleen



Species: Alpinia calcarata Family: Zingiberaceae Type: Sun loving Medicinal uses: Fever, ulcers, rheumatism



Species: Alpinia galanga Family: Zingiberaceae Type: Sun loving Medicinal uses: Nervous diseases, rheumatism, cardiac diseases



Species: Amaranthus spinosus Family: Amaranthaceae Type: Sun loving Medicinal uses: Urinary disorders, poisonous affections, swelling



paeniifolius Family: Araceae Type: Sun loving Medicinal uses: Diarrhoea, rheumatic swellings, elephantiasis



Species: Ananas comosus Family: Bromeliaceae Type: Sun loving Medicinal uses: Hyperacidity, jaundice, kidney stones



Species: Andrographis paniculata Family: Acanthaceae Type: Sun loving Medicinal uses: Cold, chronic fever, chronic malaria



Species: Anisochilus carnosus Family: Lamiaceae Type: Sun loving Medicinal uses: Cough, cold, liver disorders



Species: Aponogeton natans Family: Aponogetonaceae Type: Aquatic Sun loving Medicinal uses: Skin diseases, tonic, leucorrhoea



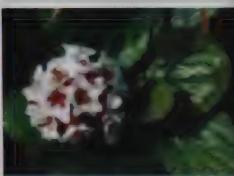
Species: Bacopa monnieri Family: Scrophulariaceae Type: Marshy Sun loving Medicinal uses: Brain tonic, hair growth



Species: Barleria cristata Family: Acanthaceae Type: Sun loving Medicinal uses: Toothache. rheumatism, glandular swellings



Species: Begonia malabarica Family: Begoniaceae Type: Sun loving Medicinal uses: Dysentery



Species: Bergenia ciliata Family: Saxifragaceae Type: Sun loving Medicinal uses: Fever diarrhoea, eve diseases



Species: Biophytum sensitivum
Family: Oxalidaceae
Type: Partial shade
Medicinal uses: Diabetes,
asthma, phthisis



26 Species: Boerhavia diffusa
Family: Nyctaginaceae
Type: Sun loving
Medicinal uses: Spleenic
disorders, urinary disorders, piles



27 Species: Caladium bicolorFamily: AraceaeType: Partial shadeMedicinal uses: Tuber is edible



Species: Capsicum frutescens Family: Solanaceae Type: Sun loving Medicinal uses: As a digestive, flatulence



Species: Caralluma adscendens var. attenuata Family: Asclepiadaceae Type: Sun loving Medicinal uses: As a vegetable



Species: Caralluma umbellata Family: Asclepiadaceae Type: Sun loving Medicinal uses: Analgesic



31 Species: Cassia absus
Family: Caesalpiniaceae
Type: Sun loving
Medicinal uses: Eye diseases,
piles, pain, constipation



32 Species: Cassia italica
Family: Caesalpiniaceae
Type: Sun loving
Medicinal uses: Antiinflammatory, analgesic, for fever



Species: Cassia occidentalis Family: Caesalpiniaceae Type: Sun loving Medicinal uses: Eczema, filariasis, cough



34 Species: Cassia tora
Family: Caesalpiniaceae
Type: Sun loving
Medicinal uses: Skin diseases.
snake-bite, ringworm



35 Species: Catharanthus roseus
Family: Apocynaceae
Type: Sun loving
Medicinal uses: Blood cancer.
sleeplessness, cardiac tonic



36 Species: Centella asiatica Family: Apiaceae Type: Marshy Sun loving Medicinal uses: Memon enhancer. leprosv. bronchitis hiccough



37 Species: Chlorophytum arundinaceum
Family: Liliaceae
Type: Sun loving
Medicinal uses: Tonic for general debility



38 Species: Chlorophytum borivillianum
Family: Liliaceae
Type: Sun loving
Medicinal uses: Tonic for general debility



39 Species: Chlorophytum
tuberosum
Family: Liliaceae
Type: Sun loving
Medicinal uses: As vegetable,



40 Species: Codariocalyx motorius
Family: Fabaceae
Type: Sun loving
Medicinal uses: Wounds,
snakebite, vermifuge



41 Species: Coleus aromaticus Family: Lamiaceae Type: Sun loving Medicinal uses: Urinary disorders, colic, dyspepsia,



42 Species: Coleus zeylanicus
Family: Lamiaceae
Type: Sun loving
Medicinal uses: Anti-microbial,
mosquito repellant



43 Species: Colocasia esculenta Family: Araceae Type: Sun loving Medicinal uses: Internal bleeding, ear ache, piles



Species: Crinum asiaticum
Family: Amaryllidaceae
Type: Sun loving
Medicinal uses: Carbuncle.
dropsy, ear disorders



45 Species: Crinum defixum
Family: Amaryllidaceae
Type: Sun loving
Medicinal uses: Treatment of
burns, induce vomiting



46 Species: Crotalaria retusa Family: Fabaceae Used as hedge: Yes Medicinal uses: Scabies, Impetigo.



47 Species: Curculigo orchioides Family: Hypoxidaceae Type: Sun loving Medicinal uses: Aphrodisiac, diabetes, leucoderma



48 Species: Curcuma longa
Family: Zingiberaceae
Type: Sun loving
Medicinal uses: Leprosy, eye
diseases, polyuria



Species: Curcuma pseudomontana Family: Zingiberaceae Type: Partial shade Medicinal uses: Jaundice, body swellings, as coolent



Species: Curcuma zedoaria
Family: Zingiberaceae
Type: Partial shade
Medicinal uses: Digestive
disorders, diseases of kapham,



51 Species: Cymbopogon citratus Family: Poaceae Type: Sun loving Medicinal uses: Cough, cold.



52 Species: Cymbopogon martinii Family: Poaceae Type: Sun loving Medicinal uses: lAnti-bacterial, to control storage pests, mosquito repellant



Species: Cynodon dactylon Family: Poaceae Type: Sun loving Medicinal uses: Vomiting, headache, fresh wounds



Species: Cyperus rotundus
Family: Cyperaceae
Type: Sun loving
Medicinal uses: Fever,
hypertension, thirst



Family: Solanaceae
Type: Sun loving
Medicinal uses: Scorpion-sting
poisoning, cough, eye diseases

Species: Datura metel



gangeticum
Family: Fabaceae
Type: Sun loving
Medicinal uses: Diarrhoea.
oedema, cardiac diseases

Species: Desmodium



Species: Dipteracanthus patulus Family: Acanthaceae Type: Sun loving Medicinal uses: Anaemia.

muscular weakness, malnutrition



8 Species: Dipteracanthus prostratus
Family: Acanthaceae
Type: Sun loving
Medicinal uses: Ear diseases, genito-urinary tract infection



59 Species: Ecbolium viride
Family: Acanthaceae
Type: Partial shade
Medicinal uses: Dysuria.
rheumatism, jaundice



Family: Asteraceae
Type: Marshy Sun loving
Medicinal uses: Ear and eve
diseases, skin diseases, leprosy



61 Species: Elephantopus scaber
Family: Asteraceae
Type: Sun loving
Medicinal uses: Diarrhoea,
kidney stones, skin diseases



Species: Eryngium foetidum
Family: Apiaceae
Type: Sun loving
Medicinal uses: Abdominal
disorders



63 Species: Eupatorium triplinerve Family: Asteraceae Type: Sun loving Medicinal uses: Bleeding, haemorrhage, skin diseases



Species: Evolvulus alsinoides
Family: Convolvulaceae
Type: Sun loving
Medicinal uses: Fever, falling
and greying of hair, abdominal
disorders



Species: Fragaria vesca
Family: Rosaceae
Type: Sun loving
Medicinal uses: Diarrhoea,
urinary problems, coffee
subsittute



66 Species: Glycyrrhiza glabra Family: Fabaceae Type: Partial shade Medicinal uses: Cough, bronchitis, fever



67 Species: Hemigraphis colorata
Family: Acanthaceae
Type: Sun loving
Medicinal uses: Cuts and
wounds.



Family: Acanthaceae
Type: Partial shade
Medicinal uses: Cuts and
wounds.



Species: Hibiscus trionum
Family: Malvaceae
Type: Sun loving
Medicinal uses: Stomachache



70 Species: Houttuynia cordata
Family: Saururaceae
Type: Partial shade
Medicinal uses: Stomach
disorders, diuretic, skin troubles



71 Species: Hybanthus
enneaspermus
Family: Violaceae
Type: Sun loving
Medicinal uses: Urinary stones,
tuberculosis, to improve memory



72 Species: Hydrolea zeylanica
Family: Hydrophyllaceae
Type: Aquatic Sun loving
Medicinal uses: Polyuria.
diarrhea, leucorrhoea



Species: Hygrophila shullii
Family: Acanthaceae
Type: Marshy Sun loving
Medicinal uses: Wounds, ulcers



4 Species: Hyptis suaveolens
Family: Lamiaceae
Type: Sun loving
Medicinal uses: Kidney and
bladder stones, gout, arthritis



75 Species: Imperata cylindrica Family: Poaceae Type: Sun loving Medicinal uses: Worm infestations, wounds



76 Species: Kaempferia galanga Family: Zingiberaceae Type: Partial shade Medicinal uses: Haemorrhage, uterine bleeding, diarrhea



Species: Kaempferia rotunda Family: Zingiberaceae Type: Partial shade Medicinal uses: Gastric troubles, mumps, tumours



8 Species: Kalanchoe laciniata Family: Crassulaceae Type: Partial shade Medicinal uses: Dysentery, diarrhoea, to arrest bleeding



79 Species: Kalanchoe pinnata
Family: Crassulaceae
Type: Sun loving
Medicinal uses: Diarrhoea,
dysentery, muscular weakness



Species: Knoxia sumatrensis
Family: Rubiaceae
Type: Sun loving
Medicinal uses: Dysentery.
wounds, Menstrual disorders.



Species: Lobelia nicotianaefolia Family: Campanulaceae Type: Sun loving Medicinal uses: Bronchial

problems, as an antiseptic



82 Species: Malachra capitata
Family: Malvaceae
Type: Sun loving
Medicinal uses: Bronchitis, as
antiseptic



83 Species: Malva sylvestris
Family: Malvaceae
Type: Sun loving
Medicinal uses: Rheumatism.
fever, worm infestation



84 Species: Melissa officinalis Family: Lamiaceae Type: Sun loving Medicinal uses: Diabetes memory enhancer, herpes



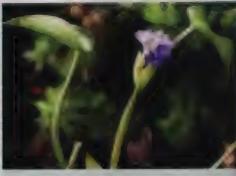
85 Species: Mentha piperata
Family: Lamiaceae
Type: Sun loving
Medicinal uses: Ulcers,
diarrhoea, hiccup



86 Species: Merremia emarginata
Family: Convolvulaceae
Type: Sun loving
Medicinal uses: Urinary
affections, rat and snake bites,
migraine



87 Species: Mimosa pudica
Family: Mimosaceae
Type: Sun loving
Medicinal uses: Diarrhoea,
dyspnoea, haemorrhage



Species: Monochoria vaginalis
Family: Pontederiaceae
Type: Aquatic Sun loving
Medicinal uses: Diseases of
stomach and liver, asthma



9 Species: Nelumbo nucifera
Family: Nelumbonaceae
Type: Aquatic Sun loving
Medicinal uses: Thirst, burning
sensation, diarrhoea



90 Species: Nicotiana tabacum
Family: Solanaceae
Type: Sun loving
Medicinal uses: Dental caries,
skin diseases, asthma



91 Species: Nymphaea pubescens
Family: Nymphaeaceae
Type: Aquatic Sun loving
Medicinal uses: Diarrhoea,
dysentery, poisoning, general
debility



92 Species: Ocimum americanum Family: Lamiaceae
Type: Sun loving
Medicinal uses: Worm infestations, poisonous affections, migraine



93 Species: Ocimum basilicum var. basilicum
Family: Lamiaceae
Type: Sun loving
Medicinal uses: Diuretic. ulcers. diarrhoea



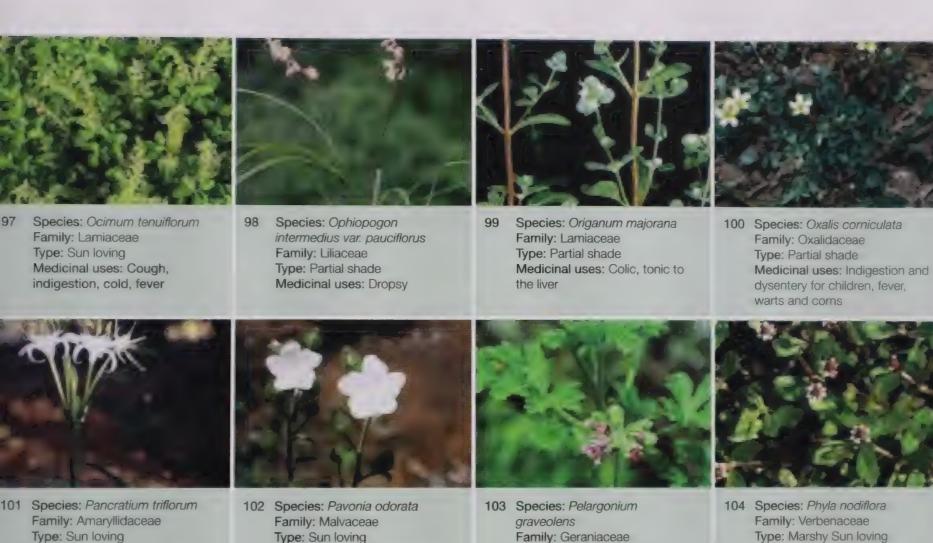
4 Species: Ocimum basilicum var. purpurescense Family: Lamiaceae Type: Sun loving Medicinal uses: Diuretic, ulcers, diarrhoea

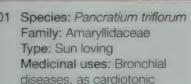


95 Species: Ocimum gratissimum Family: Lamiaceae
Type: Sun loving
Medicinal uses: Stomach disorders, nasal disorders, earache.



Species: Ocimum
kilimandscharicum
Family: Lamiaceae
Type: Sun loving
Medicinal uses: Cough
bronchitis, wounds





Type: Sun loving Medicinal uses: Rheumatism, fever

106 Species: Phyllanthus debilis

Family: Euphorbiaceae

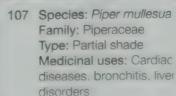
Medicinal uses: Jaundice,

indigestion, skin diseases

Type: Sun loving

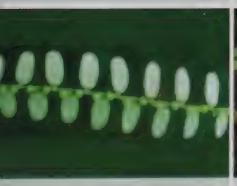


Medicinal uses: Insecticide





104 Species: Phyla nodiflora Family: Verbenaceae Type: Marshy Sun loving Medicinal uses: Dysentery, cough, pain



105 Species: Phyllanthus amarus Family: Euphorbiaceae Type: Sun loving Medicinal uses: Jaundice, diseases of pittam, menorrhagia



Type: Sun loving

108 Species: Plectranthus vetiveroides Family: Lamiaceae Type: Sun loving Medicinal uses: Indigestion dvsenterv. vomiting, fever



109 Species: Pogostemon patchouli Family: Lamiaceae
Type: Sun loving
Medicinal uses: Headache, asthma, rheumatism



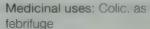
110 Species: Polianthes tuberosus
Family: Agavaceae
Type: Sun loving
Medicinal uses: Scanty urine
formation, poisonous affections



111 Species: Polygonum capitatum
Family: Polygonaceae
Type: Sun loving
Medicinal uses: Fever, rich in

antioxidants







113 Species: Portulaca oleracea
Family: Portulacaceae
Type: Sun loving
Medicinal uses: Scurvy, liver
diseases, prickly heat



114 Species: Remusatia vivipara
Family: Araceae
Type: Partial shade
Medicinal uses: Itching,
poisoning



115 Species: Rhinacanthus nasuta Family: Acanthaceae Type: Sun loving Medicinal uses: Skin diseases, worm infestation, disorders of blood



116 Species: Ruta chalapensis
Family: Rutaceae
Type: Sun loving
Medicinal uses: Hemiplegia,
oedema, earache



117 Species: Saccharum spontaneum Family: Poaceae
Type: Sun loving
Medicinal uses: Unnary disorders.
liarrhoea, eye disorders



118 Species: Salvia officinalis
Family: Lamiaceae
Type: Sun loving
Medicinal uses: Ulcers, cuts and
wounds, tonsils



119 Species: Scilla hyacinthina
Family: Liliaceae
Type: Partial shade
Medicinal uses: Cardiac tonic
expectorant, diuretic



120 Species: Sebastiana chamaelea Family: Euphorbiaceae Type: Sun loving Medicinal uses: Tonic, in vertical



121 Species: Sida acuta
Family: Malvaceae
Type: Sun loving
Medicinal uses: Arthritis,
diarrhoea, to increase strength



122 Species: Sida cordata
Family: Malvaceae
Type: Sun loving
Medicinal uses: Uterine
disorders, rheumatism,
neurological disorders



123 Species: Sida cordifolia
Family: Malvaceae
Type: Sun loving
Medicinal uses: Rheumatism,
neurological disorders, headache



Species: Solanum melongena var. incanum
 Family: Solanaceae
 Type: Sun loving
 Medicinal uses: Respiratory and cardiac disorders



125 Species: Solanum nigrum
Family: Solanaceae
Type: Sun loving
Medicinal uses: Fever, oedema,
cardiac diseases



126 Species: Solanum surattense Family: Solanaceae
Type: Sun loving
Medicinal uses: Blood
disorders, as carminative, oedema



127 Species: Solanum violaceum
Family: Solanaceae
Type: Sun loving
Medicinal uses: Cough,
dyspnoea, dental diseases



128 Species: Spilanthes calva
Family: Asteraceae
Type: Marshy Sun loving
Medicinal uses: Throat
affections, paralysis of tongue,
speech disorders



129 Species: Spilanthes olerace
Family: Asteraceae
Type: Marshy Sun loving
Medicinal uses: Throat
affections, dysentry, scabies



130 Species: Tacca leontopetaloides
Family: Taccaceae
Type: Partial shade
Medicinal uses: Dysentery



131 Species: Thalictrum foliolosum
Family: Rananuculaceae
Type: Partial shade
Medicinal uses: Tonic, diuretic

eve diseases



FOR THE RESERVE OF THE PARTY OF

132 Species: Theriophonum
minutum
Family: Araceae
Type: Partial shade
Medicinal uses: As food during

scarcity



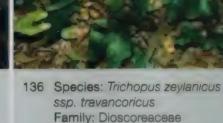
133 Species: Thymus vulgaris
Family: Lamiaceae
Type: Partial shade
Medicinal uses: Bronchitis,
whooping cough



134 Species: Tragia plukenetii
Family: Euphorbiaceae
Type: Sun loving
Medicinal uses: Anti-microbial



135 Species: *Trapa natans*Family: Trapaceae
Type: Aquatic Sun loving
Medicinal uses: Diarrhoea, for cooling



Type: Sun loving

immunity and vitality



137 Species: Uraria picta
Family: Fabaceae
Type: Sun loving
Medicinal uses: Intermittent
fever, urinary disorders, tumours



138 Species: Vernonia cinerea
Family: Asteraceae
Type: Sun loving
Medicinal uses: Fever, boils, eye
diseases, skin diseases.



139 Species: Vetiveria zizanioides
Family: Poaceae
Type: Partial shade
Medicinal uses: Diuretic, ulcers,
diarrhoea, anorexia



Medicinal uses: For stamina,

140 Species: Wedelia calendulacea
Family: Asteraceae
Type: Sun loving
Medicinal uses: Ear and eye
diseases, skin diseases, jaundice



141 Species: Withania somnifera Family: Solanaceae Type: Sun loving Medicinal uses: Diseases of cervous system, goitre, alcers



142 Species: Zingiber casumonar Family: Zingiberaceae
Type: Sun loving
Medicinal uses: Hyperacidity.
cardiac diseases. dysentery



143 Species: Zingiber officinale
Family: Zingiberaceae
Type: Sun loving
Medicinal uses: Hyperacidity,
cardiac diseases, dysentery



144 Species: Zingiber zerumbet Family: Zingiberaceae
Type: Sun loving
Medicinal uses: Hyperacidity.
cardiac diseases dysentery

## **ORCHIDS**

Orchids are known for their long lasting (lasts for two to nine months), graceful, attractive flowers. They mean wealth, love, beauty, virility, symbol of luxury in different cultures. They are generally regarded as a symbol of delicate beauty and are the most popular houseplants. Orchid flowers have the charismatic delight to impress all. Cut-flowers of orchids are arranged in the receptions, meeting halls and in flower bouquet, for their prestigious ornamental value. They are also considered as the perfect gift for any occasion. Elegant orchids could be one of the amazing additions to your garden.

Most of the orchids are very showy and colourful and a few also produce sweet fragrance; these attract pollinators such as ants, bees, birds, etc. Besides their mystique delight, quite a few of the orchid species have also been used to treat various illnesses such as lung diseases, paralytic infections, cough, chronic diarrhoea, diabetes and general debility since ancient times by various ethnic communities in India. Growing orchids needs special attention, therefore it is considered as an art.

There are two types of orchids, based on their growth habits namely, terrestrial orchids and epiphytic orchids.



Phaius tankervilleae



Paphiopedillum druryi

#### TERRESTRIAL ORCHIDS (GROUND ORCHIDS)

These orchids grow on the ground and are quite hardy. They need relatively less attention compared to epiphytic orchids. In the wild habitat, terrestrial orchids are found in a variety of micro-habitats such as on rich, humous soils in partial shade or in open grass lands or under the shade of scrub forests in semi-arid zones.

Terrestrial orchid species may be tuberous ephemerals or perennials. The aerial parts of tuberous ephemerals appear only at the beginning of monsoon, and usually bear long terminal inflorescences. Once seeds are dispersed (at the end of monsoon), the aerial parts of these orchids dry. But the tubers remain dormant in the soil and give out new shoots in the subsequent monsoon. The perennials, on the other hand, remain throughout the year.

#### **EPIPHYTIC ORCHIDS**

Epiphytic orchids grow on tree trunks or even attached on the surface of rocks. Epiphytes should not be confused with parasites, as they do not harm the host plants like the parasites do! Epiphytes do not depend on host plants for their food and nutrition, but only for substratum. Epiphytic orchids possess two types of roots, clinging roots and velamen roots. The clinging roots help in adhering to the host plant and are usually brown in colour. The velamen roots are a special kind of root, responsible for their aerial existence. They usually hang freely in the air and are green in colour because of their chlorophyll content. These velamen roots absorb moisture from the atmosphere and prepare their own food.

#### **HOW TO GROW ORCHIDS**

Orchids can be grown in pots, or branches of live trees or wooden logs. When using wooden logs to grow orchids, the logs can be hung from branches of trees or horizontal bars. If orchids are to be grown in pots, the potting mixture should be made of coconut husk, charcoal (for retaining moisture) and brick pieces (to provide grip to the clinging roots). The coconut

husk should be dried and cut into 3-5 inch pieces. Charcoal and brick should also be broken into 1-2 inch cubes. The potting mixture is made by combining 3 parts coconut husk pieces, 2 parts charcoal pieces and 1 part brick pieces.

### THE PROCESS OF PLANTING ORCHIDS IS AS FOLLOWS:

- Take a pot with 4-6 large holes on the sides.
- 2. Fill half of the pot with the special potting mixture described above.
- 3. Place the orchid plant in the pot and add a mixture of the usual potting mixture (3 parts red soil, 1 part sand and 1 part organic manure) in order to cover the roots.
- 4. Fill the pot with the special potting mixture specified.

In order to grow epiphytic orchids on branches of tree trunks, mix moss (moss is available in commercial nurseries) with vermicompost and tie it to the branch along with the orchid plant using a string. The same method is followed to grow epiphytic orchids on wooden logs. The wooden logs should have a rough surface, such as outer bark of Butea monosperma (Flame of the forest), Mangifera indica (Mango), Morinda tinctoria, Diospyros melanoxylon (Beedi-leaf plant), etc., for easy attachment of



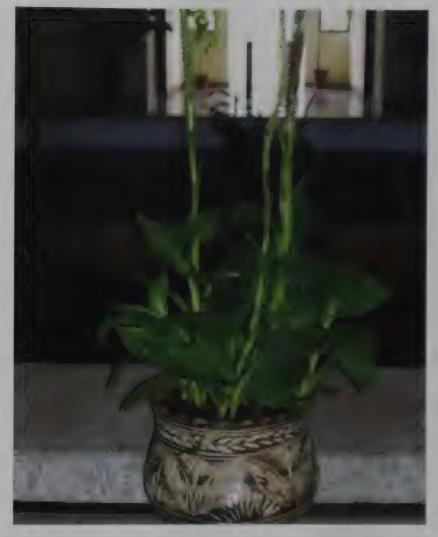
Dendrobium nobile

clinging roots. The logs can be attached to hang clips and hung on horizontal bars or tree branches with the help of wire supports.

Epiphytic orchids can be grown either in pots or on logs and tree branches but terrestrial orchids are grown only in pots.

#### TIPS TO GROW ORCHIDS

- Sprinkle water once or twice a day, depending on the weather.
- Foliar spray (cow dung slurry or organic products formulated for orchids) once in a month
- Do not encourage flowering in the initial stage of development or if the plant looks very weak (cut the flowering shoot)
- Do not repot when the orchid is in flowering
- New plantlets arising from the mother plants can be cut off and planted in new containers
- · Less light exposure seldom stimulates flowering
- Leaf colour as an index of light Colour of leaves of orchids can be used as an index of availability of light. Accordingly, they can be shifted to a place where light is optimum.
  - · Dark green leaves less of light
  - Reddish green or spotted leaves too much of light
  - Bright or glossy green leaves optimum light



Goodyera repens

# FOLLOWING TABLE PROVIDES THE CHECKLIST OF A FEW MEDICINAL ORCHIDS AND THEIR CHARACTERISTICS

SI. No.	Botanical name	Perennial/ Ephemeral	Terrestrial/ Epiphytic	SI. No.	Botanical name	Perennial/ Ephemeral	Terrestrial/ Epiphytic
1	Aeridis crispa	Perennial	Epiphytic	23	Dendrobium aggregatum	Perennial	Epiphytic
2	Aeridis fieldingii	Perennial	Epiphytic	24	Dendrobium amoenum	Perennial	Epiphytic
3	Aeridis multiflorum	Perenriial	Epiphytic	25	Dendrobium	Perennial	Epiphytic
4	Aeridis odorata	Perennial	Epiphytic	00	chrysanthum	Davanaial	Eninhadia
5	Aeridis rosea	Perennial	Epiphytic	26	Dendrobium coerulescens	Perennial	Epiphytic
6	Aeridis williamsii	Perennial	Epiphytic	27	Dendrobium crumentum	Perennial	Epiphytic
7	Arundina graminifolia	Perennial	Terrestrial	28	Dendrobium densiflorum	Perennial	Epiphytic
8	Bulbophyllum congestum	Perennial	Epiphytic	29	Dendrobium jenkinsii	Perennial	Epiphytic
9	Bulbophyllum nilgherense	Perennial	Epiphytic	30	Dendrobium macraei	Perennial	Epiphytic
10	Bulbophyllum sterile	Perennial	Epiphytic	31	Dendrobium moschatum	Perennial	Epiphytic
11	Bulbostylis barbata	Perennial	Epiphytic	32	Dendrobium nobile	Perennial	Epiphytic
12	Coelogyne cristata	Perennial	Epiphytic	33	Dendrobium ovatum	Perennial	Epiphytic
13	Coelogyne ovalis	Perennial	Epiphytic	34	Dendrobium paxtonii	Perennial	Epiphytic
14	Coelogyne punctata	Perennial	Epiphytic	35	Eria calamifolia	Perennial	Epiphytic
15	Coelogyne stricta	Perennial	Epiphytic	36	Eria epidendraea	Ephemeral	Terrestrial
16	Corymborchis veratrifolia	Perennial	Terrestrial	37	Eria pannea	Perennial	Epiphytic
17	Cymbidium aloifolium	Perennial	Epiphytic	38	Flickingeria fugax	Perennial	Epiphytic
18	Cymbidium grandiflorum	Perennial	Terrestrial and on Rocks	39	Flickingeria macraei	Perennial	Epiphytic
				40	Flickingeria nodosa	Perennial	Epiphytic
				41	Goodyera repens	Perennial	Terrestrial
19	Cymbidium hookerianum	Perennial	Epiphytic 42	42	Goodyera	Perennial	Terrestrial
20	Cymbidium pendulum	Perennial	Epiphytic	schlectandaliana			
21	Dactylorhiza hatagirea	Perennial	Terrestrial	43	Goodyera secundiflora	Perennial	Terrestrial
				44	Habenaria commelinifolia	Ephemeral	Terrestrial
22	Dendrobium aduncum	Perennial	Epiphytic	45	Habenaria crinifera	Ephemeral	Terrestrial

SI. No.	Botanical name	Perennial/ Ephemeral	Terrestrial/ Epiphytic	SI. No.	Botanical name	Perennial/ Ephemeral	Terrestrial/ Epiphytic
46	Habenaria diphylla	Ephemeral	Terrestrial	66	Papilionanthe teres	Perennial	Terrestrial
47	Habenaria edgeworthii	Ephemeral	Terrestrial	67	Phaius grandifolium	Perennial	Terrestrial
48	Habenaria grandiflora	Ephemeral	Terrestrial	68	Phaius tankevillaea	Perennial	Terrestrial
49	Habenaria intermedia	Ephemeral	Terrestrial	69	Phaius wallichii	Perennial	Terrestrial
50	Habenaria Iongicorniculata	Ephemeral	Terrestrial	70	Phalenopsis amabilis	Perennial	Epiphytic
51	Habenaria orchidis	Enhameral	Townstrial	71	Pholidota chinensis	Perennial	Epiphytic
-		Ephemeral	Terrestrial	72	Rhynchostylis retusa	Perennial	Epiphytic
52	Habenaria ovalifolia	Ephemeral	Terrestrial	73	Satyrium nepalensis	Ephemeral	Terrestrial
53	Habenaria plantaginea	Ephemeral	Terrestrial	74	Vanda coerulea	Perennial	Epiphytic
54	Habenaria rariflora	Ephemeral	Terrestrial	75	Vanda parviflora	Perennial	Epiphytic
55	Habenaria rotundifolia	Ephemeral	Terrestrial	76	Vanda roxburghii	Perennial	Epiphytic
56	Habenaria roxburghii	Ephemeral	Terrestrial	77	Vanda spathulata	Perennial	Epiphytic
57	Liparis nervosa	Perennial	Terrestrial	78	Vanda teres	Perennial	Epiphytic
58	Liparis parviflora	Perennial	Terrestrial	79	Vanda tessellata	Perennial	Epiphytic
59	Malaxis acuminata	Perennial	Terrestrial	80	Vanda testaceae	Perennial	Epiphytic
60	Malaxis biloba	Perennial	Terrestrial	81	Vanilla planifolia	Perennial	Terrestrial (Climber)
61	Malaxis mackinnonii	Perennial	Terrestrial				
62	Malaxis muscifera	Perennial	Terrestrial	82	Vanilla wightiana	Perennial	Terrestrial
63	Malaxis rheedei	Perennial	Terrestrial	83	Zeuxine longilabris	Ephemeral	Terrestrial
64	Malaxis saprophyta	Perennial	Terrestrial	84	Zeuxine strateumatica	Ephemeral	Terrestrial
65	Paphiopedilum druryi	Perennial	Terrestrial and Epiphytic	85	Zeuxine sulcata	Ephemeral	Terrestrial

#### MEDICINAL USES OF FEW ORCHID SPECIES

- Dendrobium densiflorum Leaves crushed to paste along with salt and applied on fractured area to set-right the bone.
- Pholidota imbricata Pseudobulbs finely macerated in mustard oil and applied on joints for rheumatic pains. Water extract of crushed pseudobulbs taken internally.
- Dendrobium nobile Fresh and dried stems used in preparation of Chinese drug Shih-hu of longevity and also as aphrodisiac, stomachic, pectoral, antiphlogistic, expectorant, analgesic, antipyretic, antiepileptic, to increase appetite, to cure rheumatism, excessive perspiration, impotence, entropion, leucorrhea, menstrual pain, insects in the ear, etc.
- Papilionanthe teres Drops of juice of stem & terete leaves used to treat

- earache, pus formation in ear, nose bleeding, etc.
- Acampe papillosa Root is employed under the name Rasna for rheumatism, sciatica and neuralgia. Also for syphilis and uterine diseases.
- Cymbidium aloifolium Powdering the plant with ginger and extracting the mixture with water is used to excite vomiting and diarrhoea, to cure chronic illness, weakness of the eyes, vertigo and paralysis. An ingredient of oil is used to cure tumors of both benign and malignant nature.
- Rhynchostylis retusa Roots (Rasna) for rheumatism. Plant used against asthma, tuberculosis, nervous twitching, cramps, infantile epilepsy, vertigo, palpitation, kidney stone, menstrual disorders, also as an emollient.

# **FERNS**

Ferns are non-flowering plants with beautiful green foliage. This ancient group of plants has existed since two hundred million years, much before the evolution of flowering plants. They have a long life-span and can, therefore, be included in perennial gardens. There are more than 20,000 species of ferns growing in different regions of the world, which vary in texture, height and shape. They range in size from the tiny button fern to the large Boston fern. The tree fern, Cyathea (Alsophila), looks like a small palm. Silver fern (Cheilanthes farinosa), golden fern (Onychium siliculosum) and stag-horn fern (Lycopodium clavatum) are attractive ferns that can be grown in a garden.

Ferns are usually evergreen, providing attractive foliage in the garden or for cut-flower arrangements. Many of them are good indoor growers as well. Some fern species shed their leaves annually, dying back to the ground for winter. There are some ferns which form a low spreading mound, while others create a bold upright clump.

A common feature of all ferns is the coil-like young fronds or leaves, which is characteristic of ferns. Another important feature is the occurrence of brown-coloured sac-like structures behind the mature leaves. These structures, called 'sori', contain spores. The size and shape of sori varies from one species to another. In the absence of flowers and fruits it is the spores which function as propagules. However, cultivating ferns from spores may take years. The best way to propagate ferns is by separating smaller clumps or suckers from the mother clump and planting them in separate pots. Few walking ferns can be easily propagated by cutting the connection between two plants.

### **HOW TO GROW FERNS**

Ferns are easy to grow and offer greenery to the garden. The beautiful fronds are much sought after by the florists for floral decorations and bouquets. However, we need to ensure moisture and shade for their better growth. In natural conditions they favour sheltered areas under the forest canopy, along creeks and streams and other sources of permanent moisture. Some ferns grow on other trees as epiphyte for which they have special adaptations for water storage and nutrition. They are difficult to grow in hot dry areas, like the flowering plants and conifers.

Ferns are low-maintenance plants that can be grown easily

in pots or on the ground. For planting and potting mixture of terrestrial ferns refer "How to grow Orchids" in the section on Orchids. Epiphytic ferns can be tied to a tree branch along with moss or can be planted in pots using more sand for the potting mixture. Special care should be taken to ensure that ferns grown in gardens are watered regularly.

Apart from being used as an ornamental in gardens and vases, ferns are also used as medicines by various traditional systems of medicine. Different species of ferns are used to treat diseases such as dysentery, leprosy, cuts and wounds, fever, cough and cold, general debility and also mental illnesses. *Lycopodium* is an important medicine in Homoeopathy. Species of *Selaginella* are brown when dry. When they are put in water they regain the green colour, which is highlighted by fern traders. They claim it to be 'sanjeevani'. *Diplazium esculentum* is a delicacy in northeast India.

### IST OF SOME FERNS AND THEIR CHARACTERISTICS

Name of species	Annual   Perennial	EITILIA
Actiniopteris radiata	Annual	T/L
Adiantum caudatum	Annual	Т
Adiantum concinum	Annual	Т
Angiopteris evecta	Perennial	Т.
Asplenium dalhousiae	Perennial	E
Asplenium nidus	Perennial	E
Azolla pinnata	Perennial	Α
	Actiniopteris radiata Adiantum caudatum Adiantum concinum Angiopteris evecta Asplenium dalhousiae Asplenium nidus	Actiniopteris radiata Annual Adiantum caudatum Adiantum concinum Annual Angiopteris evecta Asplenium dalhousiae Asplenium nidus Perennial Perennial

SI. No.	Name of species	Annual   Perennial	E T L A
8	Blechnum orientale	Perennial	Т
9	Bolbitis appendiculata	Perennial	Т
10	Brainea insignis	Perennial	Т
11	Cheilanthes albomarginata	Annual	L/T
12	Cheilanthes farinosa	Annual	L/T
13	Colysis hemionitide	Perennial	L

SI. No.	Name of species	Annual   Perennial	E T L A
14	Cyathea spinulosa	Perennial	T
15	Davallia trichomanoides	Annual	E
16	Dicranopteris linearis	Perennial	Т
17	Diplazium esculentum	Perennial	T
18	Drynaria quercifolia	Perennial	E/L
19	Dryopteris wallichiana	Perennial	Т
20	Elaphoglossum beddomei	Perennial	E
21	Equisetum diffusum	Perennial	Т
22	Hemionitis arifolia	Annual	Т
23	Lycopodium clavatum	Perennial	Т
24	Lycopodium flegmarium	Perennial	E
25	Lycopodium selago	Perennial	E
26	Lygodium flexuosum	Perennial	Т
27	Marsilea minuta	Perennial	Α
28	Microlepia trapeziformis	Perennial	T
29	Nephrolepis auriculata	Perennial	T
30	Nephrolepis cordifolia	Perennial	Т
31	Oleandra wallichii	Perennial	T
32	Onychium siliculosum	Annual	Т

SI. No.	Name of species	Annual   Perennial	E T L A
33	Ophioglossum reticulatum	Annual	Т
34	Osmunda japonica	Annual	T
35	Osmunda regalis	Annual	Т
36	Phegopteris auriculata	Perennial	T
37	Phymatosorum nigriescens	Perennial	E/L/T
38	Polystichum aculeatum	Perennial	T
39	Polystichum squarrosum	Perennial	T
40	Psilotum nudum	Perennial	E
41	Pteris aspericaulis	Perennial	Т
42	Pteris biaurita	Perennial	Т
43	Pteris cretica	Perennial	T/L
44	Pteris scabripes	Perennial	Т
45	Salvinia molesta	Perennial	Α
46	Selaginella hookerii	Annual	Т
47	Selaginella intermedia	Annual	Т
48	Sphenomeris chinensis	Annual	T/L
49	Sphenostephanus subtruncatus	Perennial	Т
50	Tectaria coadunata	Perennial	Т

Key: • E - Epiphyte • T - Terrestrial • L - Lithophyte • A - Aquatic

### MEDICINAL USES OF FEW FERNS

Actiniopteris radiata

Whole plant is used in vitiated conditions of Kapha and Pitta, diarrhoea, dysentery, helminthiasis, leprosy, skin diseases, diabetes and fever.

Adiantum caudatum

Fronds are used to treat skin diseases, diabetes, cough and fever.

Asplenium dalhousiae

Fronds are used in typhoid.

Cheilanthes albomarginata

Rhizome, stipe and rachis are used in cough, cold and fever and also as antiseptic and antibacterial.

Diplazium esculentum

Fronds are used in constipation and also eaten as vegetable.

Dryopteris wallichiana

Rhizome and stipe are used as antihelmintic and purgative and to cure constipation. It is also used as organic manure.

Lycopodium clavatum

Whole plant is used for chronic urinary complaints, indigestion, dyspepsia, constipation, skin diseases, etc. and also as diuretic, sedative and anti-spasmodic.

Lygodium flexousum

Whole plant is used as an expectorant. Roots, along with mustard oil, is used as local application to sprains, rheumatism, scabies, ulcers, eczema and cuts and wounds.

Nephrolepis auriculata

Fronds are used to cure cough.

Nephrolepis bulgifera

Fleshy tubers are used in case of burns and bruises.

Oleandra wallichii

Rhizome used as an aphrodisiac, health tonic and antidote.

Onychium siliculosum

Frond and rhizome used against dysentery.

Ophioglossum reticulatum

Fronds are used as an antiseptic. Fern is also edible.

Osmunda japonica

Whole plant is used as a tonic and astringent.

Osmunda regalis

Whole plant is used for rheumatism, dysentery, rickets and muscular debility and also as tonic, astringent, antibacterial and styptic.

Phegopteris auriculata

The spores are applied to reduce swelling. Fronds are used as an insecticide in poultry.

Polystichum squarrosum

Rhizome is used against stomach ailments.

Pteris aspericaulis

Rhizome and lamina used as an antiseptic.

Sphenomeris chinensis

Whole plant is used internally for chronic enteritis. Dried leaves are used to make tea.

Tectaria coadunata

Rhizome is used against stomach-ache in children.

### BAMBOOS

Bamboos are a craze in gardening and are much sought after around the world. These tall, erect, woody 'grasses', that prefer tropical environs, can also be found growing through cooler subtropics to the temperate hills

They vary in habit from strong erect tall clumps reaching over 30m to small bushes of less than 1m and to climbing forms. Bamboos generally appear in nature as clump forming, ie all the culms growing together like a bouquet. A few other species never form clumps; rather they are loosely spreading over the land like single stem plants and hence are termed nonclump forming types. Essentially bamboos are outdoor plants. However there are few smaller ones that can be grown as indoor plants too.

The many aesthetic features associated with bamboo makes them an ideal choice for gardening and landscaping. They have a characteristic noded appearance with many inter-nodes and marked nodes. Majority of them are hollow and have a lumen in the middle. However a few are almost solid (Thyrsostachys oliverii - the Kanakaich of Tripura). The culms are the most showy part of bamboos. They appear as round, 'D' shaped, or even obscurely rectangular in cross section. In some species of bamboo, the nodes are very prominent with one or two bands of white rings. In Chimonobambusa it has a ring of



Culm showing nodes and internode

thorns. The culms also appear as very large straight poles as in Dendrocalamus giganteus or as intertwined near solid clusters like Dendrocalamus strictus. While young, the culms are covered by large sheaths characteristic of each species. Bambusa vulgaris var. striata has culms with yellow and green stripes,



Nodal ring in Chimonobambusa



Dendrocalamus strictus clump

thereby appearing very ornamental. *Gigantochloa atroviolacea* is somewhat blackish-violet. The black bamboo *Phyllostachys nigra* is a curiosity for an onlooker with its black coloured culms. *Schizostachyum helferii, Dinochloa mclelandii* and *Dinochloa compactiflora* are climbers and appear cascading over other plants or hill slopes. The monopodial *Phyllostachys pubescens* has soft velvety young shoots with white nodal bands. Leaves too vary in size and shape. *Ochlandra* has broad leaves while the high altitude species of *Arundinaria* has narrow linear leaves. Some bamboos have variegated leaves with white streaks. In some, leaves appear as feathers of birds. These characteristics

make them highly ornamental and their small size make them ideal indoor potted plants.

A garden dedicated to bamboo alone is known as a Bambusetum, which is essentially a live repository of all species available in the region, especially for education and conservation. There are many indigenous and exotic species which can add beauty to our gardens in the form of groves, variously shaped live hedges, stand-alones, mixtures, lanes, avenues, live fences, pot plants, indoor ones, etc. Species like Bambusa glaucescens can be grown as live hedge. In the



Culm Sheath



Phyllostachys nigra black bamboo



Bambusa vulgaris var. striata (yellow bamboo)



Phyllostachys pubescens (with white nodal bands)

middle of the park a clump of Dendrocalamus giganteus will provide grandeur. To impart colour to the landscape species like Bambusa vulgaris var. striata or Gigantochloa atriviolacea can be grown. The intertwining clumps of Dendrocalamus strictus will add beauty to dry gardens or even to rockery edges. Bambusa wamin (often referred as Bambusa vulgaris var. wamin) the pitcher bamboo grown in isolation in open ground will be a curiosity with its pitcher (bottle) shaped internodes. Garden features like a stream or water pool can be given an elegant look by growing bamboo species such as Bambusa tulda, B. nutans or Ochlandra spp. Being evergreen, bamboo groves provide cool surroundings and an invigorating environment to the visitors.

Bamboos adapt easily to a wide range of conditions; so it can be grown in different soils. However, ideally, a sandy loam is preferable. Bamboos are easily propagated vegetatively using suckers, culm cuttings or pre-rooted lateral branches. This is because bamboos produce seeds only once in their life time (varying from 20 to 120 years) and die after seeding. It is not possible to grow large culmed bamboos in pots except in their seedling stage. Some of the thin culmed species and varieties that can be grown in pots are Pseudosassa japonica, B.

glaucescens, Sassa varieties, Arundinaria spp. etc. However, most species can be tried as pot plants in seedling stage in pots for at least two years, after which they may need to be shifted to open lands. The potted bamboos kept indoors need to be exposed to sunlight periodically. There are not many serious pests and diseases for bamboos. Regular watering bamboos is very important and they require a good amount of water. Watering for potted plants should be done using a sprinkler/rose-can at least twice a day. Bamboos produce large cluster of roots, thus choking the pots. This will warrant pruning of roots and decongestion activities carried out as and when observed. It is recommended to remove all culms older than 4 or 5 years from the pot/clump. This will facilitate more culm production and better healthy shoots in successive years. Dry and fallen leaves and branches are to be pruned and removed. The lower branches can be trimmed as part of clump management. Organic manure is ideal for better growth. The seedlings come at an affordable price. The planting season usually is pre-monsoon, though new techniques enable round the year planting except for the extreme winter months.

As bamboo clumps of larger species like B. bambos grow to enormous size and non-clump bamboos like Phyllostachys



Ornamental bamboo for pots



Bambusa wamin (pitcher bamboo)

and Melocanna spread far and wide, selection of site should be such that they are adequately away from your neighbours; otherwise this can lead to disputes, with bamboos encroaching upon their land and producing shoots there. Rhizomes can be restricted by making appropriate trenches. Thorny branches carelessly left around can cause injury and also create ill will,

### BAMBOO IN MEDICINE

Bamboo parts have been used to treat a number of ailments such as cough, fever, leprosy, swelling, cuts and wounds. It is also used as a laxative, bladder purifier and antidote for impotency and frigidity. Bamboo leaves are used in veterinary care and as fodder. It is also claimed that vinegar obtained from bamboo leaves can be used as organic manure for enhancing growth. Their utility in cancer patients are being brought to light now. Nutritious aspects of bamboo shoots are well known. Tabasheer is one of the main substances from bamboo used in Ayurvedic and Tibetan medicine. It is often called bamboo-

manna or bamboo silica (because it is rich in silica). It acts as a stimulant, astringent, febrifuge, tonic, antispasmodic, and aphrodisiac. Bambusa arundinacea is the major source of bamboo-manna; other species of Bambusa are also used. An Ayurvedic remedy, Sitopaladi Churna (powder made with tabasheer, long pepper, cardamom, cinnamom in a base of sugar), was used traditionally for tuberculosis and other wasting diseases and has been adopted as a popular remedy for common cold, sore throat, sinus congestion, and cough. In Tibet, formulas with tabasheer as the main ingredient are used for treating lung diseases.

Leaf extracts of common tall bamboos such as Phyllostachys spp. are the source of flavonoids which is effective in reducing inflammation, promote circulation and inhibit allergic reactions. It is also used as an antioxidant. Bamboo shoot and leaf components have been found to have anti-cancer as well as immuno-stimulatory qualities.



Gardening is the art that uses flowers and plants as paint, and the soil and sky as canvas

Elizabeth Miriray

## LANDSCAPE 7 ELEMENTS

HEDGES I AQUATIC GARDENS I ROCKERY I VERTICAL GARDENS I TOPIARY I MOUNDS AND PATHS & TUNNELS

An aesthetic garden consists of various landscaping elements. Using different habits of plants like herbs, shrubs, climbers, trees, orchids, ferns and bamboos various landsaping forms such as tunnels, rocker, hedges, aquatic gardens, etc. can be developed. Bringing together the various elements in the right proportion into the garden is a work of art. The artistic excellence of an expert gardener is exhibited in the way the various landscape elements are put together.



Hedges

### **HEDGES**

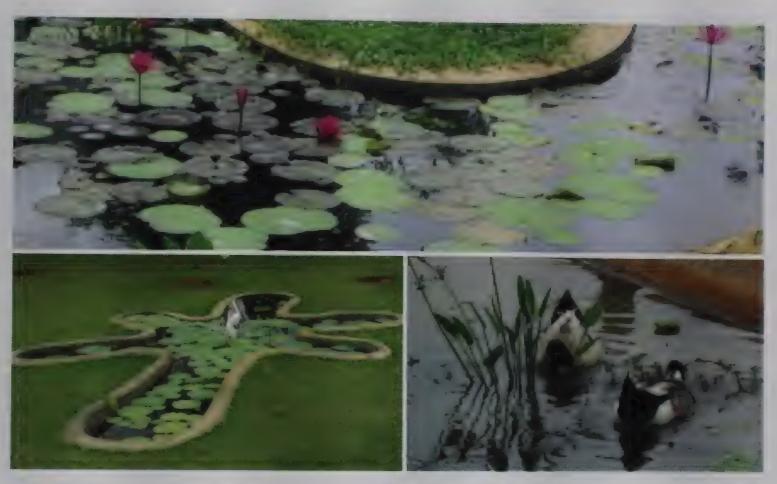
Hedges are lines of closely spaced herbs or shrubs, planted and trained in such a way as to form a barrier or to mark the boundary of an area. Evergreen species are planted for foliage. Species that blossom throughout the year are planted as flowering hedge. Hedges can be open or closed and may be clipped flat or wavy. The height of the hedges can be 6 inches to 6 feet depending upon the need. Hedges, both trimmed and unclipped, are frequently used elements for ornamental purposes in the layout of gardens. Typical species used in medicinal gardens as hedges are Gendarussa vulgaris, Hibiscus rosa-sinensis, Clerodendrum inerme, Lawsonia inermis. Ocimum kilimandscharicum, Adhatoda zeylanica, Plumbago zeylanica and Orthosiphon aristatus. Hedges below knee height are generally thought of as borders, especially to demarcate the pathways. Wedelia calendulacea, Alternanthera

spp., Hemigraphis colorata, Gendarussa vulgaris, Tagetes erecta, Ocimum sanctum and O. basilicum are the best suited species for this sort of hedges.

### AQUATIC GARDENS

Water is the base for any kind of life. As a natural element water can be displayed as a running stream, falls or still water ponds. Installing water theme into the landscape adds natural look and brings freshness to the garden. Naturally wet and damp places can be maintained as such without letting them go dry This part of the garden can be planned for aquatic or marshy gardens.

In addition to these, water ponds can be created artificially in any shape; keep in mind that irregula outlines render the best impression. Artificial streams can also be created. The sound of running wate



Aquatic Gardens

is melodious and helps to relax. Water gardens are natural homes for fish, turtles and ducks besides specific water plants.

Nelumbo nucifera, Nymphaea pubescens, Trapa bispinosa, Pistia stratiotes, Ludwigia adscendens and Nymphoides indica are some of the wild floating medicinal plants that could be planted in the aquatic gardens. Submerged species like Hydrilla verticillata, Aponogeton perfoliatus and Ceratophyllum demersum are planted to keep water clean and also to reduce the Biological Oxygen Demand of water ecosystem. Plants such as Acorus calamus, Typha angustata, Pouzolzia bennetitiana, Alocasia macrorhiza, Bacopa monnieri, Centella asiatica, Vetiveria zizanioides, Pandanus

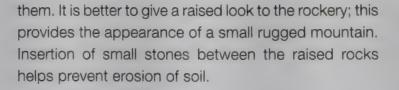
odoratissimus and Hedychium coronarium can be planted along the marshy areas of water bodies. Planting few tree species like Barringtonia acutangula, B. racemosa, Memecylon spp., Vitex leucoxylon, Ficus hispida and Salix tetrasperma brings an amazing look to the aquatic gardens. Adding a few wild life into the water ponds reduces maintenance and cleaning.

### ROCKERY

One of the most important elements of a garden is the rock. With rocks one can create many dimensions. Well-worn rocks add character and depth to the design. Select rocks and stones of various sizes and place them aesthetically. Usually, the larger rocks are placed in the centre and the smaller ones surrounding



Rockery



Various xerophytes and succulent medicinal plants can be used in a rockery. Aloe vera, Sansevieria roxburghiana, Cissus quadrangularis, Euphorbia tirucalli, E. nerifolia, E. nivulia, Sarcostemma brunonianum, Kalanchoe spp., Caralluma spp., etc. are some of the plants best suited for giving a wild, ornamental look to the rockery. Planters, water features and steps can also be added to make a rockery more appealing. Keep in mind that rockeries should be created in places where open sunlight is



Vertical Gardening

available for at least 4 hours a day.

### VERTICAL GARDENING

Amateur gardeners very often neglect to make us of the vertical space available in the gardens. If or is creative, one can use vertical space to produc some unusual and beautiful effects in the garder Good architects usually create planters in balcor and in the side walls of buildings and apartments. is an art to convert the vertical spaces into function and attractive gardens. Vertical gardens also sen as view barriers to help disguise any unappealir features and also provide privacy. Climbers, tall shrul and top-cut, densely foliaged trees are regularly use in vertical gardening. In flats and apartments flowering



Topiary

climbers with many drooping branches are used. Plants with viscid tendrils or branchlets like Trichosanthes palmata and Passiflora spp. can be allowed to grow over walls. Tinospora cordifolia, T. crispa, Ipomoea mauritiana, Basella rubra, Clitoria ternatea, Argyreia nervosa, Jasminum grandiflorum, Oxystelma secamone, Cryptostegia grandiflora, Rhynchosia cyanosperma, Rosa damascena are some of the climbing species that can be allowed to creep on trellises and fences. Tall shrubs like Holamhena pubescens, Euphorbia tirucalli, Erythroxylum monogynum, Ximenia americana and top-cut trees such as Polyalthia longifolia, Drypetes roxburghii, Melaleuca spp., Radermachera xylocarpa can also be used in vertical gardening.

### TOPIARY

Topiary is the art of creating sculptures of different shapes using clipped shrubs and trees. The plants used in topiary are evergreen, produce dense foliage,

and have small leaves and compact growth habits. Common plants used in topiary include Pouzolzia zeylanica, Acalypha fruticosa, Codariocalyx motorius, Ocimum gratissimum, Clerodendrum inerme, Ligustrum spp., Taxus spp., Pinus spp., and the like.

### MOUNDS

If the topography of the land chosen is flat, it can be made uneven if desired. This does not regiure great effort or arduous planning. Remove some soil from one area and mound it in another. Plant a few suitable species on the mound and enjoy the transformed look. The mound can also be converted into a simple grass mound.

### PATHS

Paths in the garden should be used optimally. The paths should be more functional and of minimum extent, without compromising the beauty of the garden. Paths





Mounds

Tunnels

are planned flanking or encompassing flower gardens or aromatic gardens, or passing through an area of shrubs or wooded land. Gentle curves, rather than straight lines, give a more appealing look.

### **TUNNELS**

Tunnels are passageways leading to an opening or to another part of the garden. They can be made with wood, metal or even stones in such a manner that sunlight can enter through. The structures can be given an attractive look by making it with, say, cedar wood and the upper part can be of latticework. Tunnels can be decked by allowing attractive climbers to grow on them. These help in keeping one cool in extreme summer.



Paths

# Nature is not a place to visit, it is home

ary Snydei

### GARDEN MANAGEMENT

**₩** WATER MANAGEMENT I WEEDING AND PRUNING I PROTECTION AGAINST INSECTS, PESTS, FIRE, ETC. I GENERAL MAINTENANCE

For all planting sites, certain basic conditions should be fulfilled. Water should be available at site for watering the plants. Frequent weeding immediately after planting should be done around each plant. Soil around the plant should be loosened before the dry season commences. Dead plants should be replaced with new nursery stock. A close watch should be kept against damage by insects like white ants. Water logging of the site should also be avoided.

Mere planting the required seedlings does not ensure a beautiful garden. Constant care and attention are needed to maintain its beauty and attraction. Watering, manuring, weed control, drainage, clipping and pruning, replanting and recycling are some of the major aspects that needs to be looked into to retain its attraction.

### WATER MANAGEMENT

Always ensure constant supply of water at the site. It has to be borne in mind that watering should be only according to need. This depends on climate (in summer twice a day while in rainy season once in two or three days), type of plant (herbs need more watering than trees) and so on. For well established plants watering once a week would suffice.

Watering may be done using hose-pipes, misters or drippers as per individual preferences. Misters and drippers, both over-head and ground-level, can be used to water the plants automatically. Misters have to be used in closed spaces to get best results. As these involve more expenses, both in the initial period and for maintenance, many gardeners prefer manual watering using the hose.

Layout of water line should be prepared in such a way that it can cover each and every plant of the garden. Hose pipes of required length are used to water the plant. Sprinkling funnel (usually referred as "flower" by gardeners) is attached with hose pipes for watering diminutive and delicate seedlings. Basins for individual plants and for groups should be prepared before watering. Watering should not be done directly near the roots, which often exposes the root-systems and leads the damage of root-systems, ultimately entire plant. Watering at the inner edges of basins could be a good practice.

Landscape elements, such as fountains and small streams, can be used to enhance the beauty of a garden in addition to its utilisation as a means of watering.

Care has to be taken to ensure that there is no water logging in any part of the garden. Water logging reduces proper aeration, thereby hindering healthy growth of plants. The garden should, therefore, be designed in such a manner that excess water is drained out.

### WEEDING AND PRUNING

Weeds also grow profusely in a well-aerated soil. Therefore, regular weeding has to be done around each plant for their healthy growth. The debris from weeding operations can be used for composting and manure production.

For plants that branch out profusely, regular clipping is recommended. Hedges, which are grown to demarcate between two elements in a garden as well as those grown to function as boundaries, also have to be regularly pruned. For the former, optimum height of upto 1½ to 2 feet has to be maintained. On the other hand, if they are being grown as screens or as boundaries, optimum height of 6 to 7 feet has to be maintained. Each hedge has to be pruned accordingly.

Pruning in gardens are also often used to shape hedges into various shapes which become tools of attraction.

Plants such as Costus spp., Hedychium spp., Cymbopogon spp., etc. need thinning so that they do not become overcrowded and suffocate other plants around them. Similarly, crown reduction has to be done to trees by clipping out some of the spreading branches.

### PROTECTION AGAINST INSECTS, PESTS, FIRE, ETC.

A constant watch-out has to be maintained over outbreak of diseases and invasion by pests like white ants, caterpillars, snails, etc. Immediate action is needed if any form of infection is encountered, as it can spread to other parts of the garden pretty quickly. The plants also have to be regularly supplied with manure. Using organic pesticides and manures is recommended

as they are beneficial to the plants as well as the environment. Fire protection in gardens is important in fire prone areas as it can play havoc to plants and infrastructure in the garden.

Sometimes it so happens that in spite of detailed planning, the end look of a garden is not as expected. In such cases the garden can be redesigned so that the desired look is obtained.

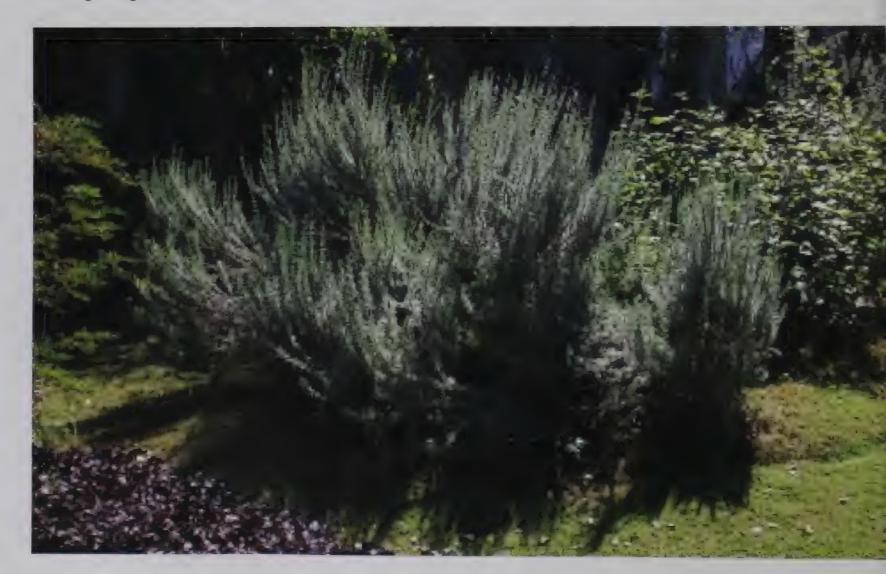
### GENERAL MAINTENANCE

As part of general maintenance the soil around the plants should be loosened before the dry season commences. Mulching during this time would be an added benefit to preserve

moisture. Planting is best done just before the monsoon. This should be accompanied by application of manure. Another round of manuring can be done after the rains.

Replanting has to be done using new nursery stock to fill the gaps created in the garden due to loss of plants, especially if they are annuals.

A well maintained garden gives immense pleasure to the beholder. More than anything else it requires commitment and love for plants to maintain a beautiful garden; the end result of which will be enhanced pleasure and maximum satisfaction.



I know that if odour were visible, as colour is, I'd see the summer garden in rainbow clouds.

obert Bridges

### SIGNAGE & EDUCATION MATERIALS

● ROLE OF SIGNAGE | TYPES OF SIGNAGE | ROLE OF EDUCATION MATERIALS I TYPES OF EDUCATION MATERIALS

An EMG is a place where visitors can get a first hand experience of plants and their uses, in addition to theoretical and practical training with respect to propagation, landscaping and conservation of medicinal plants. EMG also exposes the visitors to the cultural values of plants.

Gardens have long been associated with education. Many gardens, particularly of Universities and other educational institutions, were established primarily for the teaching botany. Similarly horticultural education and training has also been an important function of botanic gardens. Managers of parks and gardens around the world receive their training in botanic gardens. In addition to these routine education programmes, now-a-days gardens are increasingly turning to the general public in order to make them aware of environmental issues, utility of plants, etc. Knowledge can be imparted from a garden through various means. Signage and education materials are indispensable parts of such education.

ROLE OF SIGNAGE IN AN EMG:

Signage is basically to identify, inform and direct the visitor in a garden. Therefore, a good signage has to be clear, straight forward and enjoyable. Signage can be used to give visitors interesting and positive experiences of the gardens such as:

- Information about the garden and its history
- Information about flora and fauna
- Notable facts tying the space to its surrounding environment
- Communication about the general ethics inside the premises
- Identity and other information of the species
- Information about the importance of such ex-situ initiatives

### TYPES OF SIGNAGE

Many types of signage have been designed and are being used all over the world. The signage content and design can vary depending upon the purpose, target, space and information delivery. There is also a great deal of variation on the material used for the signage to suit the needs of the garden. The following are few common types of signage used in many of the gardens to attract the general public and specific target groups.

• Directional Signs: These consist of signposts with individual

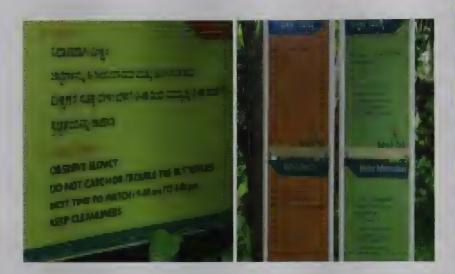
signs pointing towards an intended direction. These are located mainly near the main exit points, facility areas like water, rest rooms and refreshment areas.







 Entrance signs: This type of signage welcomes visitors and helps to orient them to the EMG. These could include welcome and history signage, basic information about timings, tickets, dos and don'ts, etc.



• Layout signs: These could clearly show the overall layout of the entire site, that includes the different sections, the routes through the site, entrance and exit points, pictures of key landmarks, special features and other facilities (rooms, toilets, cafeteria, rest spots, etc.). It is also important to have an arrow in the map indicating "You Are Here" to make it easier for visitors to locate their position in the garden. These can be positioned at the entrance, cross-roads and other strategic points.

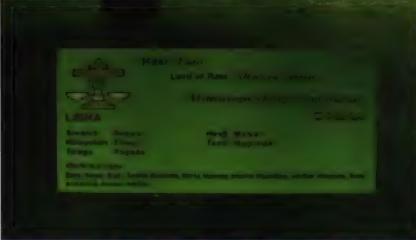


• Ethic signs: These inform the visitors about appropriate behaviour within the premises and few rules and regulations they have to basically follow in order to keep themselves in track with the park.





 Plant signage: This communicates to the visitor more about the exhibit or display than what is obviously seen. It is important to ensure the scientific accuracy of the text and visuals of the display or exhibit.



• Interactive signs: These involve people in performing an act to experience involvement with the theme on display. It usually involves mechanized movements like flip, rotate, open, etc.; but this is not a pre-requisite.

In order to make sure that the signage is effective, care should



be taken to write the text clearly, test this with smaller groups, design the layout, and fabricate and install in the right place. To make the sign contemporary, a periodic evaluation and assessment with the public should also be carried out.

### **ROLE OF EDUCATION MATERIALS:**

Education materials in an EMG need to promote and facilitate awareness, appreciation and knowledge of conservation among youth as well as adults. Further, education materials should inform the public about the cause and effect of human activities on plants of conservation concern and their habitats. To achieve this, various facets like art and culture and also interactive and creative tools have to be used in the education materials depending on the target groups. Multimedia (presentations, short documentaries, videos, etc.), print materials, hand written or drawn materials are the types used commonly. Education materials for practical experiences also



play a vital role in garden.

### TYPES OF EDUCATION MATERIALS

- Multimedia type: These are education materials used mainly with the support of an audio-visual system. It includes presentations, movies, touch panels and interactive CDs. This is considered to be the most interesting media as the public can visualize each and every concept of the theme.
- Print materials: This is a widely applied and the easiest system in reaching out to the audience. It includes a variety of things like education packets, books, manuals, field guides, postcards, etc. This is a cost-effective type of education material that can be designed, altered and used according to the group, location and the theme.



- Hand written/drawn materials: Hand written posters and placards also can be used to reach out to the public, especially children. Involving them in the preparation and display of posters and placards not only helps in creating awareness among them, but also it helps in spreading this awareness among peer groups in particular and public in general.
- Education materials for practical experiences: Practical experiences include taking the target group around the EMG



in a trail and explaining various facts about the garden and its related aspects. Most gardens have guides who conducts the tour and effectively explains the details and communicates information with the help of signage. Either during or after this period, a series of activities and games related to the themes can be applied and executed. Practical experience can also include workshops, camps and theme oriented trainings. It can involve creative experiences that include art and cultural tools like puppetry, folk dances, poems and painting.

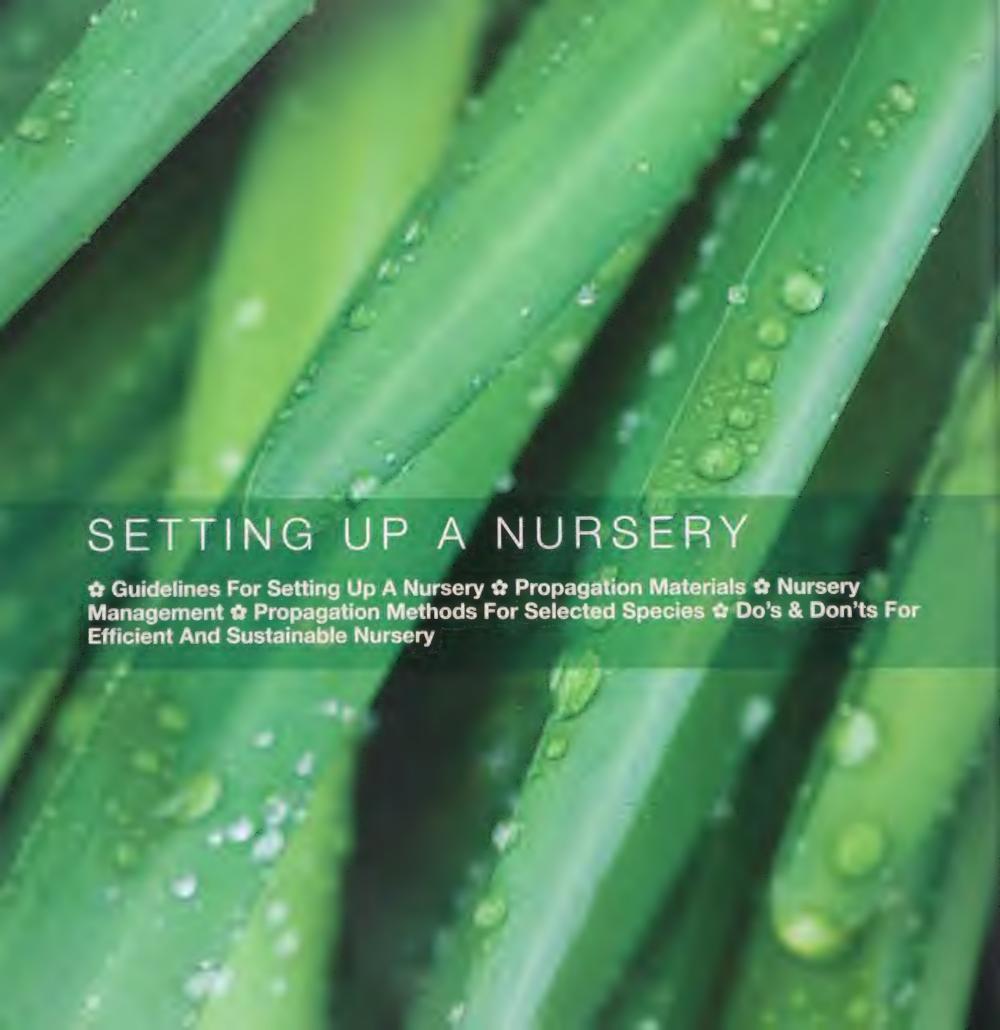
For each of these activities prior planning with suitable education materials can be designed and are extremely useful.





# Plants cry their gratitude for the sun in green joy.

istrid Alauda



1

### GUIDELINES FOR SETTING UP A NURSERY

● PLANT NURSERY I REQUIREMENTS I TOOLS AND IMPLEMENTS I LAYOUT I PREPARING NURSERY BEDS

A plant nursery is a facility where plants are propagated, protected and maintained until they can grow without additional nursery support.

A good nursery is the backbone of any garden. It helps in supply of plants to the garden in addition to visitors. To set up a nursery the following points have to be kept in mind:

- 1 Selection of site
- 2 Layout
- 3 Water source
- 4 Tools, implements and other materials

### 1 SFI ECTION OF SITE:

- While selecting a site one has to keep in mind that an easy approach road is vital for the smooth running of a nursery, because transport of material to and fro from the nursery is a constant need.
- It is desirable to have a gently sloping site so as to have a good drainage. Wet and damp places should be avoided.

- The nursery should be well-fenced and can simultaneously have a live-hedge planted along the fence. A square or rectangular nursery is preferred as it is easy to fence and also to lay the beds.
- The size of the nursery should be based on the requirement of seedlings. As a thumb rule, approximately 0.2-0.3 acres would be ideal for a planting area of 10 acres. The nursery should accommodate nursery beds, mother beds, store room, space for compost pit, drying yard for seeds and other materials and a working shed for bag filling, etc. Remember to keep some extra space for future expansion.

### 2 LAYOUT:

- The layout of the nursery should be such that nursery beds and the mother beds get optimum sunlight as well as good access for irrigation and any other necessary maintenance.
- The nursery beds as well as mother beds are generally

- oriented in East-West direction, for optimum exposure of individual plants to the sun.
- The beds may vary in size from 5m X 1.2m to 10m X 1.5m. Ideally nursery beds as well as mother beds measure 5m X 1.2m, with a 1m path between two beds. Each bed can maintain approximately 500 seedlings.
- Shade house is required for plants that prefer shade to moderate sun.

### **NURSERY BEDS:**

- \* Nursery beds must be made on leveled ground with wellbroken and well-drained soil. A thin layer of sand is also added on the top; this prevents damage of polythene sheet spread on the bed.
- \* Plants in containers such as polybags, pots, etc. should be placed in the beds after spreading a plastic sheet. This is to avoid penetration of roots into the soil.
- \* Based on locality three types of nursery beds can be prepared; namely, raised beds for wet areas, sunken beds for dry areas and flat beds for areas of average rainfall. Raised beds must be about 30 cm in height with the top dressed with a layer of fine soil. Sunken beds should be atleast 15 cm deep.

### MOTHER BEDS:

- \* The soil is well dug before making beds so that it becomes aerated properly and also is mixed properly.
- \* The mother beds are prepared just before sowing, and depending on the species raised or sunken mother beds are chosen. For eg. Seeds of Nyctanthes arbor-trisits is sown on raised beds, whereas seeds of Withania somnifera is sown in sunken beds. Seeds of Moringa oleifera on the other hand is sown in flat beds.
- \* The size of the mother bed is determined based on the availability of seeds or cuttings.
- \* A good medium for germinating seeds is loam:sand or loam:vermiculite in the ratio 1:1. For stem and root cuttings,

- rhizomes, etc. a sand bed or vermiculite would be a good medium.
- \* Quick sprouting of vegetative propagules can be attained by maintaining optimum humidity and temperature. Mist chambers, misting tunnels, polytunnels, etc. can be used for this purpose.

### 3 WATER SOURCE:

- · Adequate water should be available, especially in the dry season. So, a perennial source of water is of utmost importance in setting up and maintaining a nursery.
- Test the water sample before starting the nursery.
- 4 TOOLS, IMPLEMENTS AND OTHER MATERIALS: Some of the basic tools and implements that are required for a small nursery are listed below:
- 1. Sprayers, Hose pipes, Rose cans and other accessories for watering plants
- 2. Wheel barrows for shifting the plants
- Sieves for soil mixtures
- 4. Trays for seed germination
- Pick-axe, spade, shovel, etc. for preparing soil
- Secateurs, knives and saws for cutting
- 7. Khurpa, weeder, etc. for weeding
- Polythene spread sheets for nursery beds to avoid root penetration into the soil
- Tags and name plates/boards for naming the plants, bed types, bed numbers, etc.
- 10. Containers for storing seeds
- 11. Tarpaulin sheet or mats for drying seeds
- 12. Measuring tape

### **CONTAINERS:**

Plants can be maintained in the nursery in containers like polybags, pots, root trainers, etc. based on the type of plant, period of maintaining it in the nursery, availability of space, etc. Pots can be of various sizes ranging from a diametre of 15 cm

upto 60 cm. Size of polybags varies from 5 cm X 10 cm to 40 cm X 50 cm in diametre. Root trainers also come in varying sizes. Soil mixture used in pot and polybag is ideally made of Loam:Sand:Farm Yard Manure (FYM) in the ratio 5:1:2. Root

trainers, on the other hand, are filled with cocopeat, because they cannot to hold the normal potting mixture. Cocopeat also aids in easy removal of seedling later on.



- Impact sprinkler mechanism
- 2 Garden hose
- Wheel barrow
- Watercan
- Secateur ouvert
- Shovel
- Water miser sprayer

- Hedge shear
- Secateur
- 10 Khurpa
- 11 Weeder
- 12 Hand digging tool 1
- 13 Hand digging tool 2
- 14 Hand trovel





# As is the gardener, so is the garden

Anonymus

## PROPAGATION 2 MATERIALS

● SEEDS I SELECTION OF SEEDS I TYPES OF SEEDS I PRETREATMENT I STORAGE I CUTTING

Propagation is the process of increasing the number of plants of a particular species. The propagation materials used can be formed by both sexual and asexual methods. Seeds are formed as a result of sexual reproduction in plants; while stem and root cuttings, rhizomes, bulbs, etc. are asexual means of reproduction. Seeds, stem cuttings and divisions are the most commonly used propagules.

### SEEDS:

Seeds are the most commonly used means of propagation of plants, as they are quick and economical. However, plants formed from seeds may vary from the parent plants because they are formed as a result of sexual reproduction, which has a mechanism to ensure variability.

Based on whether seeds can tolerate drying, they are classified into two main types, namely: Orthodox seeds and Recalcitrant seeds.

Orthodox seeds (Eg. Cassia spp., Ocimum spp., Hibiscus spp., etc.)

- These seeds can tolerate water loss for long periods of time if dried and stored properly.
- They are usually large in size and have a hard seed coat
- The seeds can be stored in air tight containers like bottles, cans and tins, which can be kept at room temperature or refrigerated; or containers like jute bags, where moisture and temperature are not controlled. The type of container and type of storage depends on the species.

Recalcitrant seeds (Eg. Saraca asoca, Azadirachta indica, Murraya koenigii, etc.)

- These seeds cannot be dried below a certain level of moisture.
- They are not viable for long periods of time and should be sown as soon as they are collected.

### PROCESSING OF SEEDS:

- Select mature and ripe fruits for collecting the seeds.
- Examine the fruits for any pests and diseases; and discard those showing any signs of insects or other pests.
- Remove seeds from ripe fruits and dry in the shade for future use.
- If fruits are unripe, store the entire fruit along with the stalk in paper bags until ripe. The fruits are stored along with the stalk to minimise pathogen attack.
- Do not expose the seeds to direct sunlight for drying.
- Do not leave seeds in hot unventilated conditions such as inside vehicles, box of two-wheeler vehicles, etc.
- The quiescent (or dormant) seeds have hard seed coat that are impermeable to water and oxygen. Scarification by mechanical or chemical means help in breaking the dormancy of such hard-coated seeds.
- Seeds of some species of plants resist germination even after absorption of water. This type of dormancy is usually broken by change in exposure to light or temperature.

### SOWING:

- Small/ minute seeds should be sown in mother beds or in trays, while larger seeds can be sown directly into polybags.
- The best time for sowing seeds is the pre-monsoon season. If water is available in adequate quantities, sowing can be done at any time of the year. However, many species prefer particular seasons, when they have maximum germination and grow best.
- The time of sowing seeds also depends on factors like time of fruit ripening and seed maturity and also seed dormancy and viability.
- Seeds having short viability should be sown immediately after collection, whereas seeds with longer viability can be stored and sown later.

### STEM CUTTINGS:

Stem cuttings are pieces of stem or branch, with few

nodes, which are cut from the plant and encouraged to grow independently. This method is extensively used by horticulturists, as plants resulting by this method are uniform and identical to the mother plant.

- Sharp secateurs, which have been previously cleaned, are to be used to cut the shoots.
- Immediately after cutting they should be placed in covered buckets, half-filled with water; they should be planted within 12 hours.
- While planting the cuttings the exposed ends are sealed with wax or cow dung. In case the cuttings are not being planted immediately, then both the cut ends have to be sealed with wax or cow dung. This is done to prevent dessication.
- In case of specific procedures being mentioned for a particular species, the described procedure should be followed.
- Stock plants intended for making cuttings are not allowed to flower because, cuttings made from stock plants after flowering and fruiting show slow rate of sprouting and rooting.
- Removal of apical buds from the stock plants intended for making cuttings results in rapid growth of lateral buds and branches.
- Covering the mother bed using misting tunnels after planting the cuttings results in quick sprouting.

### ROOT INITIATION AND USE OF ROOT INITIATORS:

- Sprouting of buds in the aerial part of the cutting does not necessarily indicate rooting below.
- The ability of cuttings to form roots is dependent on age of the stock plant, time of the year of planting, water stress and exposure to light.
- As increase in concentration of plant hormones like auxin results in increased lateral branching of roots, use of root promoting hormones such as Indole acetic acid (IAA) and Indole butyric acid (IBA) are recommended for quick rooting of cuttings.

- Rootex, Seridex, Rooton, etc. are some of the commercial preparations of IAA and IBA available in the market.
- Powder form of these hormones are the easiest to use.
- The lower ends of the cuttings are moistened first and then dipped in the powder.
- They are then planted such that the lower buds go beneath the soil.

Stem cuttings are of three major categories, namely hardwood cuttings, semi-hardwood cuttings and softwood cuttings.

HARDWOOD CUTTINGS: (Eg. Gmelina arborea, Azadirachta indica, Moringa oleifera, etc.)

- These type of cuttings are made from woody, mature stems.
- Such cuttings are more hardy and can, therefore, be kept for a longer time.
- Bundles of such cuttings have to be wrapped in moist sacking material, heavy paper or moist moss and stored in cool and dark place till they are planted.
- These type of cuttings are generally planted without leaves.

SEMI-HARDWOOD CUTTINGS: (Eg. Adhatoda zeylanica, Piper longum, Punica granatum, etc.)

- These type of cuttings are taken from new or tender shoots and are thus only partially mature.
- in general pencil thick cuttings are preferred.
- They are usually planted with leaves; however, leaves at the lower part of the cutting, which goes into the ground, are removed.

Growing such cuttings in closed propagation units give best results.

SOFTWOOD OR SUCCULENT WOOD CUTTINGS: (Eg. Basella alba, Coleus aromaticus, etc.)

- These cuttings are soft and tender.
- They are planted with leaves.
- They have to be wrapped in newspaper or jute material and kept in the shade.
- The cuttings have to be planted without much delay as they are more prone to desiccation
- It is ideal to plant them in mother bed made of sand alone.

### **DIVISIONS:**

- This is the simplest method of propagation.
- This method involves splitting a clump into individual pieces and encouraging each division to grow as a new plant. Eg. Vetiveria zizanoides, Cymbopogon citratus, etc.
- Division can also be done of stem and root modifications such as rhizomes, corms, tubers, bulbs and suckers. Eq. Asparagus racemosus, Allium spp., Zingiber spp., Alpinia spp., etc.

### PLANTING:

- Stem cuttings and divisions can be planted in the premonsoon season.
- If water is available, planting can be done at any time of
- The soil should be well drained to avoid rotting of propagules.

## No garden is without its weeds

Thomas Fuller

# NURSERY MANAGEMENT

■WEEDS | WASTE MANAGEMENT | PLANTS DISEASES | CAUSES | SYMPTOMS AND PREVENTION

Watering, weeding, waste management and pest and disease management are processes that need to be carried out on a daily basis. These form part of nursery management.

#### WATERING:

- Plants need to be watered twice daily in the dry months and once daily during the rest of the period.
- Both under watering and over watering have to be avoided. Special care should be taken to avoid excess watering. During the rainy season watering can be done based on dampness of the soil.
- A fine sprayer is ideal for watering, especially herbaceous plants and mother beds.
- Watering is best done in the early morning or late evening.

#### WEEDING:

- Weeds are plants that grow where they are not intended to grow. They have to be removed.
- Weeds are usually controlled manually by uprooting.
- Weeding should be done before they set flower or fruit.

Controlling weeds by using organic weedicide is also gaining popularity in recent times.

#### WASTE MANAGEMENT:

- Compost is partially degraded organic waste.
- Compost can be made from plant parts and other biodegradable materials such as animal manure, straw, husk, vegetables, etc.
- Organic waste produced in the nursery and garden can be effectively used in the maintenance of a nursery.
- A vermicompost unit can be profitably included in the nursery.

#### PEST AND DISEASE MANAGEMENT:

A disease is defined as any condition caused by microorganisms such as fungi, bacteria and virus. Attack of microorganism affects the health and growth of the plant; in some cases the plant is killed. Pests are insects, nematodes and other similar animals that cause damage to plants. They may damage or destroy plant parts or even entire plants.

Pest attacks can also make the plants more susceptible to diseases as they create opening for pathogens to enter. Some of the factors leading to pest and disease attack of plants are as follows:

- Low or high temperatures
- Unfavourable soil-moisture relations
- Accumulation of injurious impurities
- Deficiency or excess of minerals
- Injurious atmospheric gases
- Impure water
- Water logging
- Parasites like Cuscuta, Cassytha, Mistletoe, etc.

SOME COMMON SYMPTOMS AND PLANT DISEASES **OBSERVED IN NURSERIES:** 

#### DOWNY MILDEW:

This disease is prevalent throughout peninsular India. The affected seedlings have pale yellow, narrow leaves covered with a fine white down. This occurs on both surfaces of the leaf, but chiefly on the underside. (Eg. Adhatoda zeylanica, Tinospora cordifolia, Hibiscus rosa-sinensis, Withania somnifera, Aegle marmelos, etc.)

#### WITHERING AND WILTING:

The term wilting is applied to those cases where a whole plant dries up more or less suddenly from fungus attack at the roots or base of stem (Eg. Withania somnifera, Coleus aromaticus). Withering of the whole plant or some part of it is often the first indication of fungus infection. (Eg. Basella alba, Ruta graveolens)

#### PALLOR:

This is due to destruction of chlorophyll in the leaves. It maybe as a result of attack of pathogens on the leaves leading to discolouration. (Eg. Bacopa monnieri) Pallor may also be due to water logging or iron deficiency.

#### DAMPING OFF:

Damping off is the sudden collapse of seedlings due to weakening of the tissues at the base of the stem. The seedlings fall over due to fungal infection at the base of the stem. (Eg. Withania somnifera, Indigofera tinctoria, Ocimum spp.)

#### LEAF-SPOT:

Spots of varying shapes and colours are observed on the leaves. This is caused mainly by bacteria (Eg. Citrus spp.) or fungi (Eg. Wheat)

#### CANKERS:

These are open wounds, often of spreading nature, surrounded by a raised, tumour-like margin. Cankers are caused by bacteria. (Eg. Citrus spp.)

#### **GALLS AND TUMOURS:**

Abnormal, swollen outgrowths are often produced on stems and leaves, caused by bacteria and virus. They can also be formed as a result of insect attack. (Eg. Pongamia pinnata, Terminalia chebula, etc.)

#### SHOOT ROTTING:

Rotting of plant parts above the ground is caused by fungi. The rot may be wet or dry. (Eg. Coleus aromaticus, Ocimum spp., Basella alba, etc.)

#### CONTROL MEASURES FOR DISEASES

- Spray Neem oil/ Pongamia oil mixed with soap solution (20 ml neem oil/Pongamia oil: 20 ml soap water: 1 litre water)
- Spray Neem/Adhathoda leaf extract (200 ml leaf extract: 1 litre water)
- Place the plant in sunshine and add little quantity of vermicompost or FYM
- Place the plant in sunshine and regulate watering
- Spray Neem leaf extract
- Spray organic fungicides

For powdery mildew, spray raw milk (without adding water) for 5 days

#### CONTROL MEASURES FOR PESTS

- Decoction of leaves of Vitex negundo is sprayed
- Make powder of 500 g dried neem seeds and soak overnight in 15 litres of water. Sieve it twice and spray.
- Chilli powder and tobacco leaves powder can also be soaked overnight in water and used. They generally take little longer to repel or kill the insects hence it is applied as soon as insect problem is noticed.
- Mix 60 ml of Neem or Pongamia oil in 1 litre of water and spray.
- In case of mealy bug a decoction of tobacco/neem oil along with kerosene and soap water is sprayed.

\*Avoid spraying fertilizers or pesticides while the leaves are in strong sunlight, because the water evaporates quickly and hence does not solve the purpose.

#### DISEASE PREVENTING MEASURES:

- Introduction, maintenance and use of only healthy source plants.
- Maintenance of fertile or appropriate soil conditions soil well supplied with organic materials.
- Appropriate pruning of trees and shrubs.
- Immediate removal and destruction of infected plants and plant materials. The infected plant part and debris should be removed from the field and burnt in far-off places.
- Destruction of infected plants and susceptible weeds. This controls the possibility of spread of diseases.
- Thorough cleaning of all machinery, equipment, implements and containers before moving into uncontaminated area.
- Maintenance of phytosanitary conditions inside the
- Use of organic fertilizers such as Nemex, Vorlex, Nemagon and Mylone. These are added to the soil to control pathogenic nematodes, soil insects and soil fungi.



Among gardeners, enthusiasm and experience rarely exist in equal measures

Roger B. Swain

# PROPAGATION METHODS FOR SELECTED SPECIES

#### ADHATODA ZEYLANICA

HABIT: Evergreen gregarious medium sized shrub PROPAGATION: This plant can be propagated by cuttings only.

- Semi-hard wood cuttings are most suitable for vegetative propagation.
- Cuttings of pencil thickness having 3-4 nodes are planted in polybags or in raised beds containing sand, soil and FYM in the ratio 2:1:1.
- Exposed tips are covered using cow-dung to avoid dessication and for better response.
- The best season for propagating this species is April to June.
- The sprouts are initiated after 10 -15 days.
- New leaves emerge after 15 days.
- Rooting starts after 25 days.
- Sprouting is 80 %
- The new saplings can be transplanted to the field after 6-8 weeks.

#### **ALOE VERA**

HABIT: Herb

PROPAGATION: The propagation is through root suckers

#### with 4-6 leaves

- The root suckers have to be taken from the 2 year-old plants.
- A healthy mother plant produces 4 6 suckers at a time.
- The best season for planting the cuttings is March to April, i.e., before the rainy season.
- The root suckers are planted in raised beds or in polybags containing sand, soil and FYM in the ratio 2:1:1.
- Water logging should be avoided
- Sprouting is 100%
- They can be transplanted to the field after one month or after two new leaves emerge.

#### ANDROGRAPHIS PANICULATA

HABIT: Herb

PROPAGATION: This plant can be propagated by seeds as well as by cuttings.

#### THROUGH SEEDS

- Viability of seeds is six months
- The best season for sowing is July to Nov
- Seeds are separated from the dried fruits
- Sowing should not be deep (not more than 1" deep)

- Seeds are dried in sun and mixed with fine sand and broadcasted in raised mother beds or in aluminum trays
- Germination starts after 7-10 days.
- Germination is 80%
- 5 cm tall seedlings can be transplanted to polybags and after 4-6 weeks seedlings can be transplanted to the field. They are planted 1-1.5 ft apart.

#### THROUGH CUTTINGS

- Soft stem cuttings (4-6" in length) are planted in polybags containing sand
- Watering should be done twice (morning and evening) every day till they sprout
- The sprouts are initiated after 8 days.
- Rooting is initiated after 8-10 days of sprouting
- Rooting is 70 80%
- Cuttings can be transplanted after one month

#### CARICA PAPAYA

HABIT: Small tree

PROPAGATION: This tree can be propagated by seeds only

- The seeds are sown in polybags during January / February and watered daily.
- The seedlings can be transplanted to the field after 40-45 days at 1-2 m distance

#### **COLEUS AROMATICUS**

HABIT: Small herb with hairs on the stem.

PROPAGATION: This can be propagated by cuttings only.

- Soft wood cuttings with 2-3 nodes are planted in pots or in raised mother beds
- Sprouting is 95%
- Rooting is initiated after 2 weeks and new leaves emerge.
- Rooting is 85 95 %
- These saplings can be transplanted after 3-4 weeks

#### **HEDYCHIUM CORONARIUM**

HABIT: Shrub

PROPAGATION: This can propagated by rhizome cuttings only

- Rhizome cuttings of 4-5" length are most suitable.
- The rhizome cuttings are planted in polybags containing sand, soil and FYM in the ratio 2:1:1 or sand beds
- Sprouting occurs after 10-14 days.
- The seedlings can be transplanted after 4-6 weeks depending on the growth of the plant.

#### **HIBISCUS ROSA-SINENSIS**

HABIT: Shrub

PROPAGATION: This can propagated by cuttings only

- Semi hard-wood cuttings of 6-8' length are most suitable.
- The cuttings are planted in a slant position in polybags containing sand, soil and FYM in the ratio 2:1:1
- Sprouting occurs after 8-10 days.
- The seedlings can be transplanted after 4-6 weeks depending on the growth of the plant.

#### **IPOMOEA MAURITIANA**

HABIT: Climber

PROPAGATION: This species is best propagated by seeds

- The dried seeds are soaked in hot water (80°C) for one hour.
- Line sowing is done on raised mother beds at a depth of
- Germination starts after 7-10 days.
- Germination is 80%
- Seedlings can be transplanted to polybags at 4-5 leaf stage and after 4-6 weeks seedlings can be transplanted to the field.

#### **MORINGA OLEIFERA**

HABIT: Tree

PROPAGATION: This tree can be propagated both by seeds as well as cuttings.

THROUGH SEEDS

- Well dried seeds should be sown in polybags during the period February to April.
- Germination takes place after 10-15 days.
- They can be transplanted to the field after they attain a

height of 1-11/2 ft during the monsoon season.

#### THROUGH CUTTINGS

- Green (semi soft wood) cuttings of 1½-2 ft are suitable for this purpose.
- They are planted in big polybags during the monsoon season.
- They can be transplanted to the field after two to three months by which time they should have sufficient leaves to with stand the transplantation shock.
- Transplantation should be done either in the early mornings or late in the evenings.

#### OCIMUM BASILICUM

HABIT: Herb

PROPAGATION: This plant can be propagated both by cuttings as well as seeds.

#### THROUGH SEEDS

- Seeds are collected during January/February and sown in raised seed beds.
- Germination starts after 10-15 days.
- The seedlings can be transplanted to the field after they reach a height of 6-8" and have 10-15 leaves.

#### THROUGH CUTTINGS

- Soft stem cuttings are most suitable for propagation.
- The 4-6" cuttings are planted either in pots or polybags and covered by a poly-tunnel to reduce evaporation
- They are watered once in a day lightly so that water logging is avoided.
- The seedlings can be transplanted after they produce enough new leaves to withstand the transplantation shock

#### **OCIMUM TENUIFLORUM**

HABIT: Erect, herbaceous, much-branched, softly hairy, annual

PROPAGATION: This plant can be propagated by seeds as well as cuttings.

#### THROUGH SEEDS

• Seeds are collected during January/February and sown in raised seed beds.

- Germination starts after 10-15 days.
- The seedlings can be transplanted in the field after they reach a height of 6-8" and have 10-15 leaves.

#### THROUGH CUTTINGS

- Soft stem cuttings are most suitable for propagation
- The 4-6" cuttings are planted either in pots or polybags and covered by a poly-tunnel to reduce evaporation
- They are lightly watered once daily so that water logging is avoided.
- The seedlings can be transplanted after they produce enough new leaves to withstand the transplantation shock.

#### **OPERCULINA TURPETHUM**

HABIT: Climber

PROPAGATION: This plant can be propagated both by seeds as well as cuttings.

#### THROUGH SEEDS

- Seeds are soaked in hot water for one hour and sown in raised seed beds.
- Germination starts after 7-10 days.
- The seedlings can be transplanted at the 4-5 leaved stage.

#### THROUGH CUTTINGS

- Soft-wood cuttings are most suitable for propagation
- The 4-6" cuttings are planted either in mother beds or polybags and covered by a poly-tunnel to reduce evaporation.
- They are lightly watered once daily so that water logging is avoided.
- The seedlings can be transplanted after they produce enough new leaves to withstand the transplantation shock.

#### **OROXYLUM INDICUM**

HABIT: Tree

PROPAGATION: It is cultivated by seeds.

 Seeds are papery thin and flies off with wind. Hence the fruits have to be harvested before they split open. The fruits are tied lightly and dried in the shade.

- Seeds are soaked in cold water for 16 hours and sown in flat beds.
- Germination starts after 7-10 days.
- Germination is 80-85%.
- They can be transplanted to the field after 1 month.

#### PHYLLANTHUS EMBLICA

HABIT: Tree

PROPAGATION: This tree is propagated by seeds as well as budding and grafting

THROUGH SEEDS

- Seeds are collected during the months of December to January.
- Overripe fruits are sun-dried to facilitate removal of the stone; or they are cut in half right through the stone.
- The extracted seeds are given the float test and all the seeds that sink are collected
- The seeds are sown in polybags containing sand, soil and FYM in the ratio 2:1:1, and watered with a fine spray.
- They can be transplanted to the field during the months of June/July, i.e. during the monsoon season.
- This plant grows well on transplantation even in rocky places.

#### THROUGH BUDDING OR GRAFTING

- Budding or grafting is done during March or April
- Success rate is 85-90%

#### **PIPER LONGUM**

HABIT: Climber

PROPAGATION: This plant is propagated by cuttings only.

- Semi-hard wood cuttings are most suitable for this purpose.
- The cuttings with 3-6 nodes are planted in polybags containing sand, soil and FYM in the ratio 2:1:1
- At least one node must be inside the soil and these bags should be kept in a shady place.
- Rooting is initiated after 3-4 weeks and these plants can be

- transplanted to the ground during the rainy season.
- Transplantation should be done in the early mornings or in the evening.

#### PIPER NIGRUM

Habit: A slender climber with shout, clinging roots.

Propagation: This plant is propagated by cuttings only.

- Semi-hard wood cuttings are most suitable for this purpose.
- The cuttings with 5-6 nodes are planted in polybags containing sand, soil and FYM in the ratio 2:1:1
- Two nodes must be inside the soil and the polybags should be kept in a shady place.
- Rooting is initiated after 3-4 weeks and these plants can be transplanted to the ground during the rainy season.
- Transplantation should be done in the early mornings or in the evening.

#### **PUNICA GRANATUM**

HABIT: Shrub

PROPAGATION: This plant can be propagated by seeds as well as cuttings.

#### THROUGH SEEDS

- The seeds are cleaned, mixed with ash.
- These seeds are broadcasted in seed beds made using sand, soil and FYM during the monsoon.
- Seeds lose viability if stored for more than a week.
- Germination starts after 10-15 days.
- They can be transplanted after they are one year old during the next monsoon.

#### THROUGH CUTTINGS

- Semi-hard wood cuttings, 8-10" long are best suited for this purpose.
- The cuttings are planted in polybags or seed beds with sand, soil and FYM in the ratio 2:1:1 during monsoon seasons.
- They can be transplanted into the field after they are one year old during the next rainy season.

#### SARACA ASOCA

HABIT: Tree

PROPAGATION: It is propagated by seeds.

- Seeds should be collected from March to May or September to November.
- The seeds are prone to insect attack. This has to be kept in mind while collection of seeds.
- Seeds cannot be dried and stored. So they have to be sown immediately.
- The seeds should be sown 5-7 cm deep in polybags.
- Germination starts after 45 days.
- Germination is 90-95%.
- They can be transplanted to the field after 5-6 months.

#### **TINOSPORA CORDIFOLIA**

HABIT: A large glabrous climbing shrub

PROPAGATION: This species can be cultivated both by seeds as well as by cuttings.

#### THROUGH SEEDS

- Fresh seeds should be sown in polybags during the months of May or June.
- Germination starts after 10-15 days
- Saplings can be transferred to the ground after 6-8 weeks.

#### THROUGH CUTTINGS

- Semi-hard wood cuttings are suitable for vegetative propagation.
- The cuttings should have 4-8 nodes and should be 1-2 cm thick.
- The cuttings should be planted in a polybag in a slanting position and kept in the shade and watered daily.
- Sprouting starts after 3-4 weeks and they can be transplanted to the ground/ pot after 8-10 weeks.

#### **VETIVERIA ZIZANIOIDES**

HABIT: Grass

PROPAGATION: Propagation of this species is through root slips.

- Root slips are collected and planted directly in polybags during the rainy season.
- 2 or 3 slips are planted in each polybag.
- The top of the slips are cut down before planting to prevent transpiration loss.
- They can also be planted directly in the field.

#### **VITEX NEGUNDO**

Habit: Shrub

PROPAGATION: This plant can be propagated by cuttings.

- Semi-hard wood cuttings are collected after the flowering season.
- Cuttings of 1-1.5 cm thickness are planted in polybags containing sand, soil and FYM in the ratio 2:1:1 during the monsoon season.
- Sprouting occurs after 2-3 weeks.
- 4-5 weeks after the plant is established in the polybags, they are transplanted into the field.

#### WITHANIA SOMNIFERA

HABIT: Herb

PROPAGATION: It is cultivated by seeds.

- Seeds should be collected from March to May or September to November.
- Seeds should be dried in the shade for one week before
- The seeds should be sown in sunken seed beds, covered by a thin layer of soil and watered lightly.
- Germination starts after 7 days.
- They should be transplanted into polybags after 2 weeks.
- They can be transplanted to the field after 30-45 days.

Trees are the earth's endless effort to speak to the listening heaven

Rabindranath Tagore

### FOR EFFICIENT AND SUSTAINABLE NURSERY

#### Do's

- Use measures (vessels) for filling the soil mix into the polythene bags
- Use different types of sprinklers and microsprinklers for watering the nursery beds and mother beds
- Use live hedges as source for getting propagules for the nursery (Avoid planting species that are not raised in the nursery)
- Create your own poly-tunnels. It is not true that only sophisticated mist chambers can be used for better rooting and sprouting of cuttings.
- While preparing stem cuttings, tie a rope at the bottom of the bunch to distinguish the top from the bottom. This is to prevent the cuttings from being planted upside down.
- Burn/char the area before preparing mother beds; this prevents germination of weeds and also provides protection from nematodes present in the soil.
- Use specially designed knife for cutting rootsuckers produced in plants like Aloe vera that are planted in polybags
- Keep the nursery area neat, clean and well displayed observing phytosanitary conditions.
- Always use healthy seeds and cuttings collected from healthy plants for propagation.

#### Dont's

- Do not transport the cuttings in closed or air-tight carriers such as vehicle box; instead, just wrap the cuttings in news print or gunny bags, sprinkle a little water and transport them.
- Do not allow flowering and fruiting of the stock plant used for getting cuttings
- Do not bring any infected plant or plant parts into the nursery
- Do not use the same equipment that was earlier used for cutting and pruning infected plants without thorough cleaning
- Do not throw away the used polybags and other such waste. Store and sell these, so that they can be recycled.
- Do not dispose plant waste. Instead make a pit and use the plant waste to make your own compost.
- Do not plant tree poles or stacks right side up. Plant them inverted so that there is no chance of their rooting.

# If you truly love Nature, you will find beauty everywhere

Vincent Van Gogh

## ANNEXURE I - PAVITHRAVANA

#### NAKSHATRAVANA

SI. no.	Nakshatra	Name of plant
1	Ashwini	Strychnos nux-vomica
2	Bharani	Phyllanthus emblica
3	Kritika	Ficus racemosa
4	Rohini	Syzygium cumini
5	Mrugashira	Acacia catechu
6	Aardra	Piper longum
7	Punarvasu	Bambusa arundinacea
8	Pushya	Ficus religiosa
9	Achlesa	Mesua nagassarium
10	Magha	Soymida febrifuga
11	Pubba	Butea monosperma
12	Uttara	Ficus virens
13	Anuradha	Mimusops elengi
14	Chitra	Aegle marmelos
15	Swati	Terminalia arjuna
16	Vishakha	Flacourtia jangomas
17	Hasta	Spondias pinnata
18	Jyeshta	Pinus longifolia
19	Moola	Canarium strictum
20	Purvashada	Ficus bengalensis
21	Uttarashada	Artocarpus heterophyllus
22	Shravana	Calotropis gigantea
23	Dhanishta	Acacia ferruginea
24	Shatabisha	Neolamarckia cadamba
25	Purvabhadra	Melia azadirach
26	Uttarabhadra	Mangifera indica
27	Revathi	Madhuca latifolia

#### **RASHIVANA**

SI. no.	Raashi	Lord of Rashi	Name of plant
1	Mesha	Kuja	Pterocarpus santalinus
2	Vrushabha	Shukra	Alsotnia scholaris
3	Mithuna	Budha	Artocarpus heterophyllus
4	Karka	Chandra	Butea monosperma
5	Simha	Ravi	Stereospermum personatum
6	Kanya	Budha	Mangifera indica
7	Tula	Shukra	Mimusops elengi
8	Vrischika	Kuja	Acacia catechu
9	Dhanush	Guru	Ficus religiosa
10	Makara	Shani	Dalbergia latifolia
11	Kumbha	Shani	Acacia ferruginea
12	Uttara	Guru	Ficus bengalensis

#### NAVAGRAHAVANA

Si. no.	Graha	Name of plant
1	Soorya	Erythrina stricta, Calotropis procera
2	Chandra	Butea monosperma
3	Mangala	Acacia catechu
4	Budha	Achyranthes aspera
5	Guru	Ficus religiosa
6	Shukra	Hibiscus rosa sinensis, Ficus glomerata
7	Shani	Dichrostachys cinerea, Acacia ferruginea
8	Raahu	Canarium strictum, Cynodon dactylon
9	Ketu	Withania somnifera, Saccharum spontaneum

#### SATYANARAYANA POOJA

	PUSHPA PUJA		PATRA PUJA
SI. no.	Name of plant	SI. no.	Name of plant
1	Nerium odorum	1	Ocimum sanctum
2	Jasminum grandiflorum	2	Jasminum grandiflorum
3	Michelia champaca	3	Michelia champaca
4	Mimusops elengi	4	Aegle marmelos
5	Nymphaea pubescens	5	Cynodon dactylon
6	Nymphaea nouchali	6	Chrysanthemum indicum
7	Chrysanthemum indicum	7	Origanum majorana
8	Jasminum officinale	8	Artemisia pallens
9	Jasminum sambac	9	Nerium odorum
10	Clitoria ternatea	10	Evolvulus alsinoides
11	Linum usitatissimum	11	Artemisia indica
12	Nyctanthes arbor-tristis	12	Jasminum officinale
13	Calophyllum inophyllum	13	Jasminum sambac
14	Jasminum pubescens	14	Achyranthes aspera
15	Jasminum angustifolium	15	Nyctanthes arbor-tristis
16	Pandanus odoratissimus	16	Punica granatum
17	Bauhinia purpurea	17	Ziziphus jujuba
18	Stereospermum suaveolens	18	Cedrus deodara
19	Saraca asoca	19	Acacia ferruginea
20	Areca catechu	20	Mangifera indica
21	Punica granatum	21	Phyllanthus emblica
22	Cedrus deodara	22	Ficus bengalensis
23	Polianthes tuberosa	23	Nelumbium speciosum
24	Nelumbium speciosum	24	Ochlandra rheedii

## NNEXURE II - LIST OF PLANTS WITH BOTANICAL & LOCAL NAMES

HRUBS

a. No

lo.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
	Abutilon hirtum	Atibala	Thutthi	Bankhanghi	Oorakam	Vatta thuthi	Nela benda	Hairy Indian Mallow
	Abutilon pannosum	Marathi - Karnadi		Kharanti				Ragged Mallow
	Acalypha fruticosa		Chinni gida		Kaattu munja	Siru sinni	Chinni	Birch-leaved acalypha
	Adhatoda beddomei	Vasaka	Vaasa		Chitadalodagam	Siru aadathodai	Chinna addasaramu	
	Adhatoda zeylanica	Vasa	Aadusouge	Adusa	Adalodakam	Aadathodai	Addasaramu	Malabar Nut
	Allophylus cobbe				Mukkannan pezhu			
	Alocasia macrorhiza	Manaka	Mundigedde	Mankanda	Pazhchembu	Kacha karanai		Giant Taro
	Alstonia venenata	Vishagni	Addasapra		Analivegam	Sinnappalai		
	Anisomeles malabarica	Mahadrona	Karitumbe	Chodhara	Karintumpa	Paeyimiratti	Mogabiraku	Malabar Catmint
	Artemisia nilgirica	Davanam	Davana	Davana	Davana	Marukkozhundhu	Davanamu	Indian Wormwood
	Asystasia dalzelliana		Harani					Violet Asystasia
	Averrhoa carambola	Kamaranga	Kamaraka mara	Kamaranga	Irumpanpuli	Pulichi pazham	Tamaratamu	Star Fruit
	Baliospermum montanum	Nagadanti	Naaga danti	Danti	Nagadanti	Pei amanakku	Kondamudam	Red Physic Nut
	Bauhinia acuminata	Kancanara- sveta	Bili kanchuvala	Safed-kachnar	Vellamandaram	Kokkumandarai	Devakanchanamu	Dwarf White Orchid Tree
	Bauhinia tomentosa	Pitakanchana	Kanchuvala	Kachnar	Kanchanappu	KaAttathi	Kanjini	Yellow Orchid Tree
	Bixa orellana	Sinduri	Rangumaale	Sinduriya	Kurangu Manjal	Kurangu Manjal	Jaaphara	Lipstick Tree
	Buddleja asiatica		Karakani	Dhura	Poompatta chedi			White Butterfly Bush
	Cadaba fruticosa		Maragade	Kadhab	Kattakatti	Vzhudhi	Chikonadi	Indian Cadaba
	Caesalpinia pulcherrima	Krishnachuda	Rathna kanthi	Gulu-tora	Chettimandaram	Mayilkonrai	Pamiditangedu	Peacock Flower
	Callicarpa tomentosa		Aarathi soppu		Naikumbil	Kaattukkumil	Bodiga chettu	Urn-Fruit Beauty Berry
	Calotropis gigantea (purple flowered)	Arka	Ekka	Madaar	Erukku	Erukku '	Jilledu	Crown Flower

SI. No.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
22	Calotropis gigantea (white flowered)	Arka	Bili Ekka	Madaar	Vellai erukku	Vellai erukku	Thella jlledu	Crown Flower
23	Calotropis procera	Alarka	Chikka Ekka	Madar	Cheria erukku	Chinna erukku	Chinni jilledu	Rubber Bush
24	Carissa carandas	Karamarda	Kavale kaayi	Karaunta	Karanda	Kalaa	Kalivi	Karanda
25	Cassia alata	Dadrughna, chakramarda	Dodda thagache	Dadmurdan	Simayakati	Vandukolli	Seema avise	Candle Bush
26	Cassia auriculata	Aavarttaki	Tangadi	Taarvaar	Aaviram	Aavaarai	Tangedu	Tanner's Cassia
27	Cassia hirsuta			Kaasamard		Malaiyaavaarai		Woolly Cassia
28	Cestrum diurnum		Hayalu raja	Din-ka-raj		Nar pakal nayaki	Pagal raaja	Day Jasmine
29	Cestrum nocturnum		Raatri-rani	Rat-ki-rani		Nalliravu nayaki	Re raani	Night Blooming Jasmine
30	Cinnamomum zeylanicum	Tvak, Darusita	Lavangachekkae	Dalchini	Karuva	llavargam	Sanna lavanga	Cinnamon
31	Cipadessa baccifera		Narachalu gida	Nalbila	Pulippanchedi	Pulippanchedi	Chandbera	Ranabili
32	Citrus aurantium	Jambira bheda	Herale	Khatta	Vadugappulinaarakam	Naarathai	Narangamu	Lime
33	Citrus maxima	Madhukarkati	Chakkotha	Chakotra	Bambitinarakam	Pampalimasu	Pampara	Pomelo
34	Clerodendrum colebrookianum	Nephaphu – Assamese	Phuihnam – Mizoram					
35	Clerodendrum inerme	Kundali	Vishamadhaari	Lanjai	Shangam kuppi	Peenaari changu	Pisangi	Glory Bower
36	Clerodendrum paniculatum		Theru hoovu		Deepasthambam			Pagoda Flower
37	Clerodendrum phlomides	Agnimantha	Thaggi gida	Arni	Munjja	Tazhuthaalai	Tekkali	Ami
38	Clerodendrum serratum	Bhaarngi	Gantu bharangi	Bhaarangi	Cherutheku	Sirutheku	Gantubarangi	Blue Fountain Bush
39 ' '	Clerodendrum viscosum	Bhandirah	Ibbane	Bhant	Peruku	Perukilai	Bokkuda	Hill Glory Bower
40	Costus speciosus	Canda	Aarathikondige, Pushkaramoola	Kust	Channakuva	Kostam	Kottam	Crepe Ginge
41	Dodonaea viscosa	Aliar	Bandarike	Mehndu	Vrali	Viraali	Bandaru	Hop Bush
42	Elettaria cardamomum	Ela	Elakki	Elaichi	Elam	Elam	Elakkaya	Cardamom
43	Eranthemum capens			Gulsham				
44	Ervatamia divaricata	Nandivrksha	Nandibatlu	Chandini	Nandyarvattam	Nandiyaavattam	Nandivardhanamu	Crape Jasmine
45	Erythroxylum monogynum		Devadaari		Devadaru	Devadaaru	Gadiri	Red Cedar

No.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamii	Telugu	English
	Euphorbia splendens			Nivadunga				English.
	Euphorbia antiquorum	Vajrakantaka	Chatura kalil	Tidhara	Chatura kalli	Chathura kalli	Bontakalli	
	Euphorbia nerifolia	Snuhl	Yele kalil	Thohar	llakkali	llaikkalli	Aku-jemudu	
	Euphorbia nivulla	Snuhl	Dubbakalli	Thor	llakalli	llaikalli	Akukalli	
	Euryale ferox	Makhanna		Makhana			Mellunipadma	Prickly Waterilly
	Fagraea ceilanica		Jinnannu		Valli modagam			
	Flemingia strobilifera		Kanpoothi	Bhadula	Koomulu		Nalla baddu	Wild Hops
	Gendarussa vulgaris (green)	Krishna-nirgundi	Karl nekki	Nill-nargandi	Karunochchi	Karunochchl	Nalianochili	Gandarusa
	Gendarussa vulgaris (purple)	Krishna-nirgundi	Karl nekki	Nill-nargandi	Karunochchi	Karunochchl	Nalianochili	Gandarusa
	Glycosmis mauritiana		Guroda gida		Paanal	Paanal		Orangeberry
	Gmelina asiatica	Biddari	Nela shivani	Badhara	Kumil	Nilakkumil	Nela gummadi	Asian Bushbeech
	Gossypium arboreum	Karpasah	Hatthi	Kapas	Kattuparuti	Semparuthi	Pratti	Cotton
	Hibiscus Iunarifolius			Raanbhendi	Maiankuruparutthi			
	Hibiscus rosa-sinensis (Red-flowered)	Japa	Dasavala	Gudhal	Chemparatti	Chemparuthi	Mandaramu/Erra daasani	China Rose
	Hibiscus rosa-sinensis (White-flowered)	Japa	Bili dasavala	Gudhal	Velutha chemparautti	Chemparuthi	Tella mandaram/ Tella Dasaani	China Rose
	Ixora arborea		Goravi	Kotagandhal	Soochi mulla	Korivi	Korlvi	Small Flowered Ixo
	Ixora coccinea	Raktaka	Kepala, bettada daasavaala	Rangan	Thecchi	Vetchi	Bandhukamu	Ixora pink
	Janakia arayalpathra				Arayalpathra			
	Jasminum angustifolium	Vanamallika	Adavimallige	Banmallika	Kattumulla	Kattumalligai	Adavlmalli	Wild Jasmine
	Jasminum sambac	Virupakshi- mallika	Gundumalli	Motia	Mulla	Malligai	Malligai	Jasmine
	Jatropha curcas	Vyagra eranda	Dodda haralu	Jangli erandi	Kadalaavanakku	Kaataamanakku	Adavi aamudamu	Physic Nut
	Jatropha glandulifera	Dravanti	Bili Kaadu haralu	Jangli erandi	Atala	Aadhalai	Nelayamudumu	
	Jatropha gossypifolia	Vyagra eranda	Kempu kaadu haralu	Bheranda	Seema avanakku	Karu aadhaalai	Seema aamudamu	Bellyache Bush
	Justicia betonica	Sahacarah- sveta	Sanna aadusoge		Venkurinji	Velimungil	Thellarantu	Squirrel Tail
	Kleinia grandiflora					Muyalkaadhu ilai		
	Lawsonia inermis	Madayantika	Goranti	Henna	Mailanchi	Maruthaani	Gorintaaku	Henna

II. N

3

4 :

SI. No.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
72	Leea Indica	Kukkura jihva	Andilu	Kukkura jihva	Njezhu			
73	Leea macrophylla	Dholasamudrika	Samudraka	Dholsamudra	Njallu		Peddapayagil- laaku	Hathikana
74	Maytenus emarginata		Tandrasi	Kankero	Kattu patchotti	Kattangi	Dhanti	
75	Mundulea sericea		Betta hurali			Malai avarai	Kondavempali	
76	Murraya koenigii	Surabinimba	Kari bevu	Karalpak	Kariveppu	Karuveppilal	Karriveppu	Curry leaves
77	Murraya paniculata	Muramamsi	Kaadu karibevu	Marchula	Maramulla	Kattu kariveppilai	Naagagolugu	Kamini
78	Nepenthes khasiana							Indian Pitche Plant
79	Niigirianthus ciliatus	Sahacarah- bheda	Gurgi	Karvi	Karim kurinji	Chinna kurinji		
80	Nyctanthes arbor- tristis	Paarijaata	Paarijaata	Harsimgaar	Paarijaatam	Pavilamalligai/ Paarijaatham	Pagadamalli/ Parijatham	Har Singar
81	Ochna obtusata				Anavalaru			
82	Opuntia dillenii	Vidara- vishvasaraka	Papasu kalil	Nagphani	Nagathali	Chappathi kalli	Nagajamudu	
83	Pandanus odoratissimus	Ketaki	Kedage	Kevda	Kalta	Thaalai	Mogili	Kewda
84	Pavetta Indica	Papata	Paapadi	Papari	Pavetta	Paavattai	Nallapapidi	Indian Pavet
85	Phoenix humilis	Bhukharjuri		Khajur		Sitreechalu	Kondaita	Dwarf Date Palm
86	Phyllanthus polyphyllus		Manakanni		Kattu kirzhanelli		Kondapachaari	
87	Phyllanthus reticulatus	Krishna-kamboji	Karesuli	Panjoli	Kattuniruri	Poolaathi	Nallapurugudu	Black-Honey Shrub
88	Pimenta officinalis		All spice		Sarvasugandhi			Allspice
89	Pleiospermium alatum		Kaadu bilvapathre		Kurtham	Karineyamaram	Munukundu	
90	Plumbago capensis	chitraka-nila	Neelichitramoola	Neel chitrak	Neela koduveli	Neelakkodiveli	Nallachitramu- lamu	Nila Chitrak
91	Plumbago rosea	Chithraka-rakta	Kempu Chithramula	Laal chithrak	Chethi koduveli	Chengodiveli	Thelchithra	Lal Chitrak
92	Plumbago zeylanica	Chitraka-sveta	Bili Chitramula	Safaed chitrak	Vella koduveli	Kodiveli	Chitra mulam	Chitrak
93	Polyalthia korinti				Corinti-panel	Uluvintai	Nella gutti	
94	Premna serratifolia	Agnimantha	Eeji gida	Ganiyari	Munja	Peru munnai	Pinna	Headache Tree
95	Priva leptostachya		Aridhacchuka			Anthaapporunthi		Heart-leaf Velvet Bur

i. No.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
6	Punica granatum	Dadima	Dalimbe	Anar	Madalam	Madalampalam	Danimma	Pomegranate
7	Rauvolfia tetraphylla	Vanasarpa- gandha	Naalkele sarpa- gandha	Bara chan- drika	Pampumkolli	Pampukazha	Da iiriina	Wild Snake Root
3	Rosa sericea			Durkunj		Roja		<b></b>
9	Sauropus androgynus		Chakramuni	ŕ	Prameha cheera	Thavasi murungai		Silky Rose
00	Sauropus quadrangularis	Aruni		Surasaruni	Multivitamin plant		Tellavusirika	
)1	Scaevola taccada					Pathiraaksham		Half Flower
)2	Schefflera stellata					Kurangu kai maram	Marri maamidi	riali riowei
3	Schumannianthus virgatus				Malam koova	Periya-kuhai-valai		
4	Securinega leucopyrus	Bhooriphali	Bilchuli	Ainta	Ampoorippachila	Ven poolaathi	Tellapulisara	Bushweed
5	Solanum erianthum	Gandira	Kaadu sunde	Akra	Malamchunda	Malaichundai	Budama	Big Eggplant
6	Solanum khasianum			Kateli				
7	Solanum pubescens	Kantakari- bheda	Sonde		Cheriachunda		Kaashi usthe	
8 :	Solanum torvum	Brhati	Kaadu sonde	Bhurat	Chunda	Sundai	Konda vusti	Turkey Berry
9	Stachytarpheta mutabilis		Dodda kempu uthharaani			Sivappu ezhuthaani poondu		Pink Snakeweed
0	Tamarix ericoides	Jhavuka		Jhau		Athi savuku	Pabbasa	Erica tamarisk
1 3	Tarenna asiatica		Thaerani		Kuppipoovu	Therani	Kommi	
2	Thevetia nerifolia	Karavira-beda	Gante hoovin gida	Pila kaner	Karaviram	Manjal arali	Pachhaganneru	Mexican Oleander
3	Thottea siliquosa		Chakrani		Alpam		Thellayishwari	
	Typha angustata	Gundra	Jambu hullu	Patera		Sambu	Jambu	Lesser Indian Reed Mace
	Utleria salicifolia				Mahalikizhangu			
;	Vitex leucoxylon	Paravatapadi	Holenekki		Attunochchi	Neer nochhi	Lokki	
,	Vitex negundo var. negundo	Nirgundi	Bili lakki	Nirgandi	Nocchi	Nochchi	Tella vavili	Chaste Tree
	Vitex negundo var. purpurescens	Nirgundi	Neeli lakki	Nirgandi	Karinocchi	Neela nocchi	Vavili	Chaste Tree
	Vitex trifolia	Jalanirgundi	Neeru Lakki	Pani-ke- sanbhalu	Nirnocchi	Moovilai nochhi	Niruvavili	Three-Leaved Chaste Tree
	Ziziphus oenoplia	Valli-badara	Parige	Ber	Churimullu	Soorai mullu	Parakı	Jackal Jujube

SI. No.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
1	Abrus precatorius (red with black ends)	Gunja	Gulaganji	Gunj	Kunni	Gundrimani	Guruginja	Gunj
2	Abrus precatorius (red)	Gunja	Gulaganji	Gunj	Kunni	Sivappu Gundrimani	Guruginja	Gunj
3	Abrus precatorius (white)	Gunja	Gulaganji	Gunj	Kunni	Vellai Gundrimani	Guruginja	Gunj
4	Acacia caesia	Nikunjika	Kaadu seege	Nikuncham	Inja	Indu	Korinta	Twisted Acacia
5	Acacia sinuata	Saptala	Seege	Shikakai	Chikkakka	Seegaikaai	Shikayi	Shikakai
6	Adenia hondala	Vidari -bheda	Undaalu, Hariniballi		Modeca valli		Modika	
7	Adenia wightiana							
8	Allamanda cathartica		Haladi hoo haale balli		Manja kolaambi		Allemandatheega	Golden Trumpet Vine
9	Argyreia cuneata		Kallana hambu					Purple Morning Glory
10	Argyreia nervosa	Bastantri	Samudra paala	Saman- darsokh	Samudrappachha	Samuttirappaccai	Samudrapaala	Elephant Creeper
11	Artabotrys odoratis- simus	Madanakah	Katthe sampige	Madmanti	Madana kameswari	Manoranjitham	Sakalaphalasampen- ga	Hari Champa
12	Aristolochia indica	Eesvari	Ishvari balli	Ishamul	Eeshvaramulla	Eeshvaramooli	Isvara	Indian Birthwort
13	Aristolochia tagala	Eesvari bheda	Dodda ishvari balli		Eeshvaramulla	Aadutheendapalai	Nallaeeshvara	
14	Asparagus adscendens	Svetamusali		Safed musli			Sallog dooda	
15	Asparagus gonoclados		Shathaavari	Shakakul			Pillipichara	
16	Asparagus officinalis	Dripi		Shataavar				Garden Asparagus
17	Asparagus racemosus	Shatavari	Halavumakkala thaayi beru	Shataavar	Shathaavari	Thannirvittan kizhangu	Satavari	Wild Asparagus
18	Basella alba	Upodika	Basale soppu	Poi	Vasala cheera	Pasalai	Allabachhalla	
19	Caesalpinia bonduc	Kuberakshi	Gajjuga	Lathakaranj	Kazhanchi	Kalarchi	Gatchakaaya	Bonduc nut
20	Caesalpinia decapetala		Kurudu gajjuga	Kingarl			Gaddakorinda	Mysore thorn
21	Capparis zeylanica	Vyaghraghanti	Anthunde	Ardanda	Elippayar	Athontai	Aridonda	
22	Cardiospermum canescens		Dodda bekkina budde balli			Mudakatraan	Chinnabuddaboosara	

	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
	Cardiospermum helicacabum	Chakralatha	Bekkina budde balli	Kanphuti	Valli uzhinja	Mudakatraan	Nallagolisyanda	Balloon Vine
	Celastrus paniculatus	Jyothishmathi	Gangunge Hambu	Malkungi	Cherpunnayari	Vaaluluvai	Gundumeda	Black Oil Plan
	Ceropegia candelabrum		Hurrukina gedde		Njota-njodian-valli			
	Ceropegia juncea		Kuri koralu		Valakody		Bella manda	Leafless Goglet Flower
	Chonemorpha fragrans	Murva	Chandra hoovina balli	Morala	Perumkurumba	Perunkodi		Frangipani Vine
	Cissampelos pareira Cissus discolor	Patha	Parera beru	Parha	Malathangi Aaronpuli	Vattathiruppi	Adavibanga thiga	Velvet Leaf
	Cissus quadrangularis (4-angled stem)	Asthisrinkala	Mangaravalli	Hadjod	Changalamparanta	Pirantai	Vajra valli	
	Cissus quadrangularis (bluntly 4-angled stem)	Asthisrinkala	Mangaravalli	Hadjod	Changalamparanta	Pirantai	Vajra valli	
	Cissus quadrangularis (cylindrical stem)	Asthisrinkala	Mangaravalli	Hadjod	Changalamparanta	Pirantai	Vajra valli	
	Cissus quadrangularis (flat stem)	Asthisrinkala	Mangaravalli	Hadjod	Changalamparanta	Pirantai	Vajra valli	
(	Cissus setosa		Huli mangaravalli			Pulinaralai	Barrebachali	
(	Clematis gauriana	Morabela	Tale jadari	Jhol	Nikidakodi		Gowri kunthala	Gourian Clematis
	Clitoria ternatea (blue lower)	Sankapuspi-nila	Shankhapushpi	Aparajit	Neela shankapushpam	Shankapushpam	Shankapushpamu	Butterfly Pea
	Clitoria ternatea (white lower)	Sankapuspi- sveta	Shankhapushpi	Aparajit	Vella shankapushpam	Shankapushpam	Shankapushpamu	Butterfly Pea
	Cocculus hirsutus	Patalagarudi	Daagadi balli	Jal-jamini	Paatalagarudak- kodi	Kattukkoti	Dusaratiga	Broom Creeper
	Corallocarpus opigaeus	Katunahi	Akashagaruda balli	Aakas-gaddah	Kollankova	Kollan kovai	Nagadonda	
C	Cryptolepis buchananii	Sariva	Metaguli hambu	Medasinghi	Kaatupaalvalli	Paalkodi	Adavipaalatiga	Wax Leaved Climber
	Cryptostegia randiflora			Rubber bel		Perum paalkodi		
C	Cyclea peltata	Paatha	Haade balli	Paathi	Padavali	Malaithaangi	Paada	
	ecalepis hamiltonii	Sveta-saariba	Maakali beru	Sveta sariva	Mahaalikizhangu	Maahaali kizhangu	Neemam theega	

SI. N

SI. No.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
44	Dioscorea bulbifera	Varahi	Ele genasu	Gethi	Kattu kaachil	Kaatu valli	Malakakayapenda- lamu	Air Yam
45	Dioscorea oppositifolia	Amlardraka	Neve genasu	Kanta-alu	Kaachil	Vetrilai valli	Aretige	Cinnamon Vine
46	Dioscorea tomentosa		Noore genasu	Hoori	Muliankizhangu	Mullu valli	Subbadumpa	
47	Diplocyclos palmatus	Lingini	Shivlinga beeja	Shivalingi	Sivalingakkaya	Aiviral kovai	Linga donda	Lollipop Climber
48	Embelia ribes	Vidanga	Vayu vilanga	Vayuvidang	Vizhal	Vaaivilangam	Valvidungalu	
49	Embelia tsjeriam- cottam	Vidanga-bheda	Vayu vilanga	Vayuvidang	Kaattu vizhal	Vaaivilangam		
50	Gloriosa superba	Langali	Gaurihoo gadde	Languli	Menthonni	Kanvallipoo/ Kalappai kizhangu	Adavi nabhi	Glory Lily
51	Gymnema sylvestre	Ajasringi	Madhunashini	Merasimgi	Chakkarakolli	Siru kurinjaan/ Sarkarai kolli	Podapathri	Gurmar
52	Hemidesmus indicus	Sariva	Sogade beru	Hindisalsa	Nannari	Nannaari	Sugandhipala	Indian Sarsaparilla
53	Hiptage benghalensis	Madhavi latha	Madhavi lathe	Madhavi latha	Seethampu	Kurukatthi	Suragata	Madhavi La
54	Holostemma ada- kodien	Jivanti	Jeevaale balli	Chirvel	Adapathiyan	Paalaikkeerai	Dudipala tige	Holostemm Creeper
55	Ichnocarpus frutescens	Sariva-bheda	Kari balli	Bilatti amli	Paalvalli	Karu nannaari/ Manjal nanaari	Nalla tiga	Black Cree
56	Ipomoea batatas	Pindaalu	Sihigenasu	Shakkarkand	Madhura kizhangu	Chakkarai vallik- kilanku	Genusu	Sweet Pote
57	Ipomoea mauritiana	Ksira vidari	Bhumichakra gadde	Bhilaykand	Palmuthukku	Paalmudangi	Bhoochakra gadda	Giant Potal
58	Jasminum auriculatum	Yoothika	Kadu mallige	Joohi	Soochimulla	Oosimalligai	Adavimulla	Juhi
59	Jasminum grandiflorum	Jati	Gundumalligae	Jati	Picchakam	Picchi	Malati	Spanish Jasmine
60	Jasminum malabaricum	Mudgara	Adavl malligae	Chameli	Kadambavalli	Mullai		Malabar Jasmine
61	Kedrostis rostrata			Nuruk-bel		Appaikkovai	Appakoray	
62	Leptadenia reticulata	Jivanti	Sihi haale balli	Dori	Paalachedi	Paalaikkodi	Mukkuthummudu	
63	Momordica charantia	Karavella	Hagala kaayi	Karela	Kaippa valli	Paavakka	Kakara	Bitter Gou
64	Momordica dloica	Karkotaka	Mada haagala	Jangli-karela	Eruma pavel	Erumai paaval	Potukakara	Ban Karela
65	Mucuna pruriens	Atmagupta	Nasugunni	Kiwach	Naykkurna	Poonakkali	Kauvage	Velvet Bea
66	Mukia maderaspatana	Krtarandhrah	Mani thonde	Bilari	Mukkalpiram	Musumusukkai	Pottibudamu	Madras Pe Pumpkin
67	Operculina turpethum	Trivrlt	Billi thigade	Nisodh	Thrikolpakkonna	Sivadhal	Tegada	Transpare
67	Operculina turpethum	Tri∨rit	Bill thigade	Nisodh	Thrikolpakkonna	Sivadhal	Tegada	

Wood Ros

No.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
	Pachygone ovata				Kattu kodivalli	Perum kattukodi	Pedda dusar teega	E. Buell
	Paederia foetida	Prasarini		Gandhali	Appinaari	Peenari	Savirela	Skunk Vine
	Passiflora edulis		Juice hannu	Passion fruit	Passion fruit			Passion Fruit
	Passiflora foetida	Mukkopeera	Kukke balli	Gharibel	Poocha pazham	Mookuchali palam	Tellajumiki	Love in a Mis
	Pergularla daemia	Kurootaka	Haalkoratige	Utaran	Vaelipparuthi	Velipparutti	Gurtichettu	Pergularia
	Piper betle	Thamboolam	Veelyadele	Paan	Vettilakodi	Vetrilai	Thamalapaaku	Betle leaf
	Piper longum	Pippali	Hippali	Pippali	Thippali	Thippili	Pippali	Long Pepper
	Piper nigrum	Maricha	Kaalu menasu	Kall mirch	Kuru mulaku	Kuru mllagu	Mirialu	Black Pepper
	Pseudarthria viscida	Saliparni	Moorele honne	Saliparni	Moovila	Muvilai pachilai	Muyakuponna	Salaparni
	Pterolobium hexapetalum		Baadu bakka			,	Korinda	OGIQDAI) II
	Pueraria tuberosa	Vidari	Gumadi gida	Vidarikand	Muthukku	Nilapoosani	Gumidi	Indian Kudzu
	Quisqualis indica		Rangoon kempu molle	Rangoon- ki-bel	Rangoon valli	Rangun mallii	Rangoon-malli	Rangoon Creeper
	Rosa damascena	Satapatri	Gulabi hoo	Gulab	Rosappu	Roja	Rajappu	Damask Rose
	Rubia cordifolia	Manjishtha	Manjishta	Manjit	Manjatti	Manjiti	Manjishtathige	Indian Madde
	Salacia chinensis	Saptacakra			Cherukorandi	Karukkuvai		Chinese Salacia
	Sarcostemma acidum	Soma -bheda	Somalathe, Hambugalli	Somalata	Somalata	Soma	Somalata	
	Smilax zeylanica	Vana-madhus- nahi	Kennaidile hambu	Ramdatun	Ramadandhi	Kaattukkodi	Kondathamara	Kumarika
	Solanum seaforthianum		Sanna sunde balli		Thoongumasu			Potato climbe
	Thunbergia fragrans		Indrapuspaballi		Noorvanvalli	Indhirapushpi	Indrathige	Sweet Clock Vine
	Tinospora cordifolia	Guduci	Amruthaballi	Guduchi	Chittamruthu	Seenthil	Tippatige	Gulbel
	Tinospora sinensis	Kanda-guduchi	Sudarsana balli	Sudarsana	Kattamruthu	Porseenthil	Thippa theega	
	Toddalia asiatica var gracilis	Kanchana	Mullu Menasu	Kanj	Mulakutanni	Kattumllagu	Kondamirepu	Lopez root
	Tragia involucrata	Vrischikali	Thurchi	Barhanta	Kodithoova	Kanchori	Dulagondi	Climbing Nettle
	Trichosanthes palmata	Mahakala	Haavu mekke kaayi	Indrayan	Kaakkathondi	Shavari pazham	Awaguda	Indrayan
	Tylophora indica	Anthrapachaka	Aadu muttada balli	Antamul	Valli paala	Nanjaruppan	Janglipikvam	Indian Ipecac
	Vallaris solanacea	Visanika	Bugudi Hambu	Ramsar	Visha paala		Paalamalle	Bread Flower

SI.

SI. No.	Name of species	Sanakrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
94	Ventilago denticulata		Popii gida	Raidhani		Vempataangodi	Surati chekka	
95	Vitis vinifera	Draksa	Draakshi	Angur	Muntihri	Dhrakshai	Draksha	Grape
96	Wattakaka volubilis	Murva-bheda	Kaadu haale balli	Mund-bel	Vattakaakka kodi	Perum kurinjan	Pala-teega	Sneeze Wort

#### TREES

Si. No.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
1	Acacla catechu	Khadira	Khadira	Khair	Karingali	Karungaali	Khadiramu	Cutch Tree
2	Acacla ferruginea	Somavalkala	Banni	Safed khair	Vanni	Seemai Velvel	Vuni	
3	Acacia leucophicea	Arimeda	Bili Jaali, Naayi Jaali	Reru	Velvelam	Velvel	Thellathumma	White Bark Acacia
4	Acacia nilotica ssp.	Babbula	Kari Jaali	Babul	Karivelam	Karu velam	Barbooramu	Babool
5	Adenanthera pavonina	Kuchandana	Mara Gulaganji	Baragumchl	Manjaadi	Yaanaikundumani	Bandi guruvenda	Red Sandalwood
6	Aegle marmelos	Bilvam	Bilvapatre	Bael	Koovalam	Vilvam	Bilva	Bel
7	Alangium salvifolium	Ankola	Ankole	Angol	Angolam	Azhinjil	Ankolamu	Sage Leaved Alangium
8	Albizia amara	Krishnasirish	Sujjalu	Siris	Sulivaaka	Usilamaram	Chikreni	Krishna Siris
9	Albizia lebbeck	Sirisah	Bage	Siris	Nenmenivaka	Vaagai	Dirisana	Siris Tree
10	Albizia odoratissima	Bhushririsha	Bilvara	Kala shirees	Pulivaka	Karu vaagai	Chinduga	
11	Alstonia scholaris	Saptaparna	Maddale	Shaitan ka jat	Ezhilampaala	Elilaippalai	Aedakularite-chettu	Devil Tree
12	Anacardium occidentale	Kajutaka	Godambi	Kaju	Kashumaavu	Mundhiri	Muntamamidi	Cashew
13	Annona squamosa	Bahubeejaka	Seethaphala	Seetaphul	Seethappazham	Seethapazham	Seethaphalamu	Sugar Apple
14	Anthocephalus cadamba	Kadamba	Kadamba	Kadamb	Kadambu	Kadambu	Kadambamu	Kadam
15	Aquilaria agallocha	Agaru	Agaru	Agar	Akil	Akil	Agaru	Aloewood
16	Artocarpus heterophyllus	Panasah	Halasu	Kathal	Plaavu	Pala	Panasa	Jackfruit
17	Artocarpus hirsutus	Panasah bheda	Hebbalasu	Kathal	Aanjili	Aiyini pala	Adavi panasa	
18	Artocarpus lakoocha	Lakucha	Vatehuli	Dhau	Theetiplaavu	Eearapalaa	Lakuchamu	Lakoocha
19	Atalantia monophylla	Atavi-jambira	Kadunimbe	Van nimbu	Kattunarakam	Kattu elimichai	Adavinimma	
20	Azadirachta indica	Nimba	Bevu	Neem	Vaeppu	Vempu	Vepa	Neem
21	Balanites aegyptiaca	Ingudi	Ingala	Hingan	Nanjunda	Nanchundan	Gara	

No.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
	Barringtonia acutangula	Samudraphala	Samudra Phala	Samudraphal	Samudrappazham	Samutthirappaalai	Kadapa	Barringtonia
	Bauhinia purpurea	Kanchana	Kanchuvaala	Kaliar	Chuvanna man- daram	Mandaarai	Devakaanchanamu	Purple Orchid
	Bauhinia racemosa	Ashmantaka	Mandaara	Karal	Mandaram	Aatthi	Are	Bidi Leaf Tree
	Bischofia javanica		Gobra naerale	Marak	Thiruppu	Mila chatayan	Nalupumushti	Bishop Wood
	Bombax ceiba	Salmali	Booraga	Semal	Mullilavu	Mullilavu	Kondaburuga	Silk Cotton Tree
	Borassus flabellifier	Taala	Tale	Taar	Karimpana	Panai	Karatalamu	Palmyra Palm
	Boswellia serrata	Kundurushka	Saambraani dhoopa	Kundur	Kunturukkam	Ven kungiliyam	Anduga	Indian Olibanum
	Butea monosperma	Palasha	Mutthuga	Dhak	Plash	llaiporasu	Moduga	Flame of the Forest
	Caesalpinia sappan	Patanga	Pattanga	Patang	Chappangam	Patangam	Bakamu	Sappan Wood
	Calophyllum apetalum	Punnaga bheda	Kallu honne	Bobbi	Cheru punna	Siru punnai		
	Calophyllum inophyllum	Punnaga	Surahonne	Sultanach- ampa	Punna	Punnai	Ponna	Sultan Champa
	Cananga odorata		Katthe Sampige		Kaattu chemp- akam	Nettiramali	Apoorvacham- pakamu	Ylang Ylang
	Canarium strictum	Mandadhupa	Raala dhupa	Kala damar	Kunthirikkam	Karum Kungilium	Nalla rajanamu	
	Canthium dicoccum		Kaare			Vippuruthi	Nalla balasu	Ceylon Boxwood
	Careya arborea	Kumbhi	Kavalu	Kumbhi	Pezhu	Ayma	Duddippa	Wild Guava
	Carica papaya	Erandakarkati	Pappayi	Papeeta	Pappaya	Pappaali	Boppayi	Papaya
	Caryota urens	Vitanaka	Bagine	Mari	Choondappana	Koondhal panai	Jilugu	Fishtail Palm
	Cassia fistula	Rajavraksha	Kakke	Suvarnaka	Kanikkonna	Manjal kondrai	Ralechettu	Amaltas
	Cassia roxburghii							Red Indian Laburnum
	Cedrella toona	Tunna	Kalingi	Tun	Malaveppu	Santhana vembu	Nandi	
	Ceiba pentandra	Shvetashalmali	Buraga	Saphed simal	Panjipoola	llavu	Tella buraga	Kapok Tree
	Chloroxylon sweitenea	Bhillotaka	Purasalu/ Hurugalu	Bhirra	Varimaram	Vammarai/ Porasu	Billudu	Ceylon Satinwood
	Chukrasia tabularis		Daal mara		Chuvanna akil	Akil/ Vedivembu	Errapogada	Chikrasi
	Cinnamomum camphora	Karpurah	Karpoora	Karpura	Karpooramaram	Karpooram	Karpuramu	Camphor
	Cinnamomum tamala	Tamalapatra	Lavanga pathre	Tejpattha	Pacchila	llavangapattiri	Thalisha-patri	Indian Bay Leaf
	Citharexylum subserratum						Marjijati	

SI. N

SI. No.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
48	Citrus limon	Nimbuka	Dodda nimbe	Nimbu	Cherunaranga	Elimichai	Nimma	Lemon
49	Citrus medica	Matalunga	Maadala	Nimbu	Ganapathinarakam	Champalam	Maadiphalamu	Citron
50	Cocos nucifera	Narikela	Thengu	Nariyal	Tengu	Thennai	Kobbari	Coconut
51	Commiphora wightii	Guggulu	Antu guggula	Guggul	Gulgulu	Guggulu	Mahisaksha	Guggul
52	Cordia dichotoma	Bahuvaara	Chikka challe	Lasoora	Virish	Naruvili	Chinna nakkeru	Indian Cherry
53	Cordia wallichii	Shelu	Challe	Lassora	Naruviri	Veeri	Kondavirigi	
54	Crateva nurvala	Varunah	Neervaala	Barun	Neermathalam	Maavalingam	Magalingam	
55	Crateva oblongifolium	Bhutamkusam		Chucka	Kattupatolam	Milgunaari	Bhutankusamu	
56	Cycas beddomei						Perita	
57	Dalbergia latifolia	Simsipa	Beete	Shisham	Veetti	Thodaagatthi/ Itti	Jittegi	Black Rosewood
58	Dalbergia paniculata	Simsipa-sveta	Pachale	Dobina	Veluttavitti		Patsaru	
59	Delonix elata	Siddhesvara	Vaatha naarayani	Sandeshra		Vaatha narayanan	Sunkesula	White Gulmohar
60	Dichrostachys cinerea	Vellantarah	Odatare	Vartuli	Vitattal	Vidathalai	Nallavenuturu	Sickle Bush
61	Dillenia pentagyna	Punnaga-bheda	Kanigalu	Karakata	Vazhapunna	Naai thekku punnai	Parudu	Karmal
62	Diospyros ebenum		Kari mara	Abnas	Karimaram	Karunthumbi	Nalluti	Ceylon Ebony
63	Diospyros melanoxylon	Kenduka	Thoopare	Tendu	Kari	Vakkanai	Tumiki	Coromandel Ebony
64	Diospyros montana	Tumala	Balagunike	Tendu	Bali	Karunkaali	Nallavulimidi	Bistendu
65	Dolichandrone atrovirens		Udee				Oddi	
66	Dolichandrone falcata	Mesasrnga	Udure	Hawar	Nirpponnalayam	Katalaatthi	Oddi	Medhshingi
67	Drypetes roxburghii	Putrajeeva	Puthranjeevi	Jeevaputrak	Putranjeevi	Kaattuppacheri maram	Kudurujuvir	Putranjiva
68	Elaeocarpus floribundus	Chorphon – Manipuri			Rudraksam			Indian Olive
69	Elaeocarpus sphaericus	Rudrakhsa	Rudraaksha	Rudraks	Rudraksam	Rudraksam	Rudrakshamu	Blue Marble Tree
70	Erythrina stricta	Paribhadrah	Mullu Mutthuga	Dhol-dak	Murikku	Kaatu mulmurungai	Mullumoduga	
71	Erythrina variegata	Paribhadraka	Paribhadrika	Daadaap	Mulmurukku	Mulmurungai	Mullamoduga	Indian Coral Tree
72	Euphorbia tirucalli	Snuhi	Snuhi	Konpal Sehnd	Tirukkalli	Kodikalli	Kanchi Jemudu	Tirucalli Rubber

SI. No.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
3	Ficus arnottiana	Plaksha	Plaksha	Paras-pipal	Kallarayal	Kallarasu	Kallaravi	Indian Rock Fig
4	Ficus auriculata	Theibal Mizoram		Timla	Aanayatthi	Atthi		1 19
5	Ficus bengalensis	Nyagrodha	Nyagrodha	Bor	Peraal	Aal	Peddimari	Banyan Tree
6	Ficus carica	Anjira	Anjira	Anjir	Seemayatti	Seemai atthi	Simayatti	Anjeer
7	Ficus hispida	Kakodhum- barika	Kakodhumbarika	Katgulariya	Paaragam	Paeyathi	Boddamarri	Hairy Fig
8	Ficus microcarpa	Plaksah	Plaksah	Chilkan	Itthi	Ichi	Yerra juvvi	Laurel Fig
9	Ficus mollis			Barila			Kallathi	Soft Fig
0	Ficus racemosa	Janthuphala	Atthi	Umar	Atthi	Athi	Brahmavedhi	Cooler
1	Ficus religiosa	Pippala	Ashvatha, Arali	Pipal	Arayaal	Arasu	Ravi	Goolar
2	Filicium decipiens				Valmuriccha	Kattu poovarasu	Patta kunkudu	Peepal
3	Flacourtia cataphracta	Talisha	Hannu Sampige	Talispatri	Talispatram	Thaalispathri	Talisapatramu	Coffee Plum
4	Garcinia gummigutta	Dharambamli	Uppage	Bilatti amli	Kodam puli	Penam puli	Sima chinta	
5	Garcinia indica	Amlavetasa	Muragalu	Kokam	Punam puli	Murgal	Tintidika	Kokam
6	Garcinia spicata		Kadu jarige		Manjanangu		Pidata	710110111
7	Garcinia xanthochymus	Tamala	Deva garige	Dampel	Thamalam	Tamalam	lvurumamidi	
3	Gardenia gummifera	Naadeehingu	Bikke	Dikaamaali	Somanaadi- kaayam	Kampil	Chittamalli	Gummy Gardenia
	Gardenia latifolia	Parpataki	Kalkambi	Papra		Kampai maram	Karinguva	Indian Boxwood
	Gardenia resinifera	Hingunadika	Bikke	Dikamali	Dikamalikayam	Siru kambil	Karinguva	Brilliant Gardenia
	Garuga pinnata	Karnikara	Garuga	Kharpat	Kaaruvembu	Karuvembu	Garuga	Garuga
	Givotia rottleriformis		Bilitale			Vandaalai	Tellapooliki	
	Glochidion zeylanicum		Kumbala mara		Neervetti	Kumpala	Itepulla	
	Gmelina arborea	Gambhari	Shivani	Gumbhar	Kumizhu	Kumil	Gummadi	Gamhar
	Gyrocarpus americanus		Kaadu bende	Zaitun	Thanukku	Kaatraadi	Kumaara ponaku	Helicopter Tree
	Haldina cordifloia	Dharakadam- bah	Hetthega ,	Haldu	Malankadampu	Manjal kadambu	Pasupukadamba	Haldu
	Hibiscus tillaceus		Samudra theeradatthi	Pola	Nirparutti	Nirpparutthi	Erragogu	Lobed Leaf Sea Hibiscus
	Hildegardia populifolia					Aattharasu		
	Holoptelea integrifolia	Chirabilva	Thapasi	Chilbil	Aavil	Aayil	Tapasi	Indian Elm

SI. No.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
100	Hopea parviflora				Irumbagam	Vellai kongu		
101	Humboldtia vahliana	Jelavedasa	Neer vaanche		Kurati	Aatruvanji		
102	Hura crepetans		Retidaani				Seema buruga	Sandbox Tree
103	Hydnocarpus pentandra	Thuvaraka	Marotti		Marotti	Neeradimuthu	Neeradi vittulu	
104	Hymenodictyon orixense		Dhodi mara	Boinga	Itthiyila	Neer kadampu	Boorija	Bridal Couch Tree
105	Kigelia africana		Aanethoradu kaayi	Balam kheera		Shivagundalam	Enuga thondamu	Sausage Tre
106	Kingiodendron pinnatum		Yenne mara		Ennappayin	Madayan Saampirani		
107	Knema attenuata		Raamanadike		Chora payin	Chora pathri		
108	Lagerstroemia microcarpa		Bili nandi		Venthekku	Siru thekku	Venthekku	Ben Teak
109	Lepisanthes tetraphylla		Kalluhetti		Kalpoovathi	Nei kottaan	Korivi	Kurpa
110	Limonia acidissima	Kapittha	Bela	Beli	Vilaarmaram	Vilaa	Velangapandu	Wood Apple
111	Macaranga peltata		Chanda kanne		Uppila	Vattakkanni	Godugu ganapa	Chandada
112	Madhuca longifolia	Madhukah	Hippe mara	Mahua	lluppa	lluppai	Ірра	South Indian Mahua
113	Madhuca nerifolia		Neeru hippe		Aattu illuppa	Aathu Illupai		Illipe Butter Tree
114	Maesa indica		Mandane	Burkani	Kirithi			Wild Berry
115	Mammea suriga		Suragi	Surangee	Suran punna		Sarapunna	Surangi
116	Mangifera indica	Amra	Maavu	Aam	Maavu	Maa	Mamidi	Mango
117	Manilkara hexandra	Raajaadana	Haale hannu	Khirni	Pazhamunppala	Paalaa	Patla	Ceylon Iron Wood
118	Melia azedarach	Mahaanimba	Hucchubevu, Arabevu	Bakaln	Malaveppu-	Malai vembu	Turakavepa	Persian Lila
119	Memecylon umbel- latum	Anjani	Ollekudi,	Nirasa	Annakkayavu	Kaayaa	Peddalli	Ironwood T
120	Mesua ferrea	Nagakesara	Naagasampige	Nagakesar	Naagakesaram	Sirunaagappoo	Naagachembagamu	Nag Kesar
121	Michelia champaca	Campakah	Sampige	Champaka	Chempakam	Shenbagam	Sampenga	Champa
122	Mimusops elengi	Bakula	Bakula	Bakul	Elanji	Magizham	Pogada	Maulsari
123	Mitragyna parvifolia	Bhumikadamba	Kadaga	Kadam	Neerkadambu	Manjal kadambu	Battaganapu	Kaim

l. No.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
24	Morinda tinctoria			Aal	Manjanatthi	Nuna	Thogara	English.
25	Moringa concanensis	madhu Sigru	Adavi Nugge	Sajana	Kaattu muringa	Kaatu Murungai	Konda Munaga	Konkan Moringa
26	Moringa oleifera	Sigru	Nugge mara	Sajana	Muringa	Murungai	Mochakamu	Drumstick Tree
27	Muntingea calabura		Gasagase hannina mara			Singapore Cherry	Nakkaraegu	Jamaica Cherry
28	Musa paradisiaca	Kadali	Baale	Kela	Kadalivaazha	Vaazhai	Kadalamu	Banana
19	Nothapodytes nimmoniana	Ghanera	Daarudurgandha, Durvasane mara		Peenaari	Perum pulagi		Ghanera
Ю	Ochrinauclea missionis		Anavu		Aattuvanji	Aatru vanji		
1	Oroxylum indicum	Syonakah	Konana kombu	Tat palanga	Palakappayyani	Vanga maram	Pampini	Broken Bones Tree
2	Persea macrantha		Kularmaavu		Kulamavu	Kula maavu	Nara	
3	Phoenix sylvestris	Kharjura	Eechalu	Khajoor	Eendhappana	Icham	Ita	Wild Date Palm
4	Phyllanthus acidus	Lavali	Kirunelli	Narphal	Arinelli	Arunelli	Raacha urisika	Star Gooseberry
5	Phyllanthus emblica	Amalaki	Bettada nelli	Amla	Nelli	Nelli	Amalagamu	Gooseberry
6	Phyllanthus indo- fischeri			Amla		Perunelli		
7	Pinus roxburghii	Sarala	Sarala	Sarala	Charalam	Charala devathaaru	Sharala	Chir Pine
В	Pinus wallichiana			Kail				Himalayan Blue Pine
9	Pleurostylla opposita					Siru payiri	Kuntichinta pairi	
	Plumeria alba	Kananakaravira	Bili Deva Kanigale	Gulchin	Velutharali	Malai arali	Veyyivarahalu	White Frangipani
п	Plumeria rubra		Kepu Deva Kanigale	Gulechin	Alari	Sivappu malai arali	Daeva ganneru	Frangipani red
	Polyalthia longifolia	Kastadaruh	Puthranjivi	Asoka	Aranamaram	Nettilinkam	Asokamu	
	Pongamia pinnata	Karanja	Honge	Karanj	Ungu	Punku	Kaangu	Pongam Tree
	Prunus cerasoides	Padmaka		Paddam	Pathikukam	Patumugam		Wild Himalayan Cherry
	Prunus laurocerasus							Cherry Laurel
	Psidium guajava	Amruthphala	Seebe	Amrud	Perakka	Koyya	Goyya	Guava
	Pterocarpus marsuplum	Asana	Honne	Bija sal	Vaenga	Vaengai	Vegisa	Malabar Kino

SI. No.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
148	Pterocarpus santalinus	Raktha chandana	Raktha chandana	Lal chandan	Rakthachandanam	Raktha chandanam	Agarugandhamu	Red Sandalwood
149	Pterospermum acerifolium	Muchakunda	Kanaka Champa	Kanak Champa	Swarna chempakam	Vennaangu	Mathsykanda	Kanak Champa
150	Radermachera xylocarpa	Svetapatala	Konana kombu mara	Garuda vrksha	Vedinkorana	Vidaa kurunai	Naga-dundilam	Padri Tree
151	Salix tetrasperma	Vanjula	Neervanji	Bains	Vanji	Neer vanji	Etipala	Indian Willow
152	Santalum album	Chandhana	Srigandha	Chandhan	Chandhanam	Chandhanam	Hari chandhanam	Sandalwood
153	Sapindus emarginatus	Phenila	Antuvaala	Rittha	Punnan-kotta	Poovam/ Poondhi kottai	Kunkudu	Notched Leaf Soapnut
154	Sapindus muckrosii	Aristaka		Rittha				Reetha
155	Schima wallichii			Chilauni				Schima
156	Semecarpus anacardium	Bhallataka	Kaadu Geru	Bhilawa	Cherumaram	Chenkottai	Jidi	Marking Nut
157	Sesbania grandiflora	Agastya	Agase	Agast	Agathi	Agatthi	Avasinara	Agati
158	Shorea robusta	Salah	Saala vriksha	Sal	Mulappumarutu	Kungiliyam	Guggilamu	Sal
159	Shorea tumbaggaia		Karidamara	Kala damar	Tembagum	Tambagam	Thamba	
160	Soymida febrifuga	Mamsarohini	Somi mara	Rohan	Mamsarohini	Semmaram	Somi	Indian Redwood
161	Spondias pinnata	Aamrataka	Amate	Jangli Amra	Ambazham	Kaattu Maa	Adavi Maamidi	Wild Mango
162	Sterculia foetida	Putidaru	Peenari	Janglibadam	Peenari	Kudhirai irukkan	Guttapubadamu	Java Olive
163	Streblus asper	Sakhotaka	Mitli	Siora	Paruva	Piraayan	Barinika	Sand Paper Tree
164	Strychnos nux-vomica	Karaskara	Kaasaraka, Vishamushti	Kajra	Kanjiram	Yetti	Mushttivittulu	Nux Vomica
165	Swietenia mahagony		Mahagony	Mahagony	Mahagani	Mahagony	Mahaagani	Cuban Ma- hogany Tree
166	Syzygium cumini	Jambu	Nerale	Jamun	Njaaval	Naaval	Neredu	Jamun
167	Taxus wallichiana	Talisa bheda		Tuner				Yew
168	Tecomella undulata	Rohitaka		Roheda	Chemmaram			Roheda
169	Terminalia arjuna	Arjuna	Holematti	Arjun	Neermaruthu	Marudhu	Tellamaddi	Arjun Tree
170	Terminalia bellirica	Bibhitaka	Thaare	Bahera	Thaani	Thaandri	Thaani	Baheda
171	Terminalia catappa	Ingudi	Kaadu Baadaami	Nakli badam	Naattu badam	Kaadu baadaam	Karakaya	Indian Almond
172	Terminalia chebula	Harithaki	Alale	Harar	Kadukka	Kadukaai	Karakkaya	Chebulic Myrobalan
173	Thespesia populnea	Haripuccha	Hoovarasi	Paaras pipal	Poovarasu	Poovarasamkallal	Gangaraavi	Indian Tulip Tree

T 1- 110		Kannada	Hindi	Malayalam	Tamil	Telugu	English
Trewia nudiflora	Pindara	Kaadu kumbla	Gamhar	Pambarakumbil	Naikkumil	Eruponaku	False White Teak
Tricalysia sphaerocarpa		Kaadu kaafi bija					TOWN
Vateria indica	Ajakarna	Saalu dhoopa	Saphed dammaar	Vellappayin	Vellai kuntirikkam	Telladaamara	White Dammar
Vitex altissima	Kankola	Navilaadi	Myrole	Mayilellu	Mayilaadi	Nemaliadugu	Peacock Chaste Tree
Wrightia tinctoria	Kutajah	Beppaale	Dudhi	Kotakappala	Vetpaalai	Chittankudu	Sweet Indrajao
Ximenia americana		Neggaare, Nagare			Kataliranchi	Nakkeru	Spiny Plum
Ziziphus mauritiana	Kolah	Elachi, Bore hannu	Ber	llantha	llandai	Regu	Ber
1	Vateria indica Vitex altissima Vrightia tinctoria Gimenia americana	Vateria indica Ajakarna Vitex altissima Kankola Vrightia tinctoria Kutajah Gimenia americana	Vateria indica Ajakarna Saalu dhoopa  Vitex altissima Kankola Navilaadi  Vrightia tinctoria Kutajah Beppaale  Vimenia americana Neggaare, Nagare  Viziphus mauritiana Kolah Elachi, Bore	Vateria indica Ajakarna Saalu dhoopa Saphed dammaar  Vitex altissima Kankola Navilaadi Myrole  Virightia tinctoria Kutajah Beppaale Dudhi  Vimenia americana Neggaare, Nagare  Viziphus mauritiana Kolah Elachi, Bore Ber	Vateria indica Ajakarna Saalu dhoopa Saphed Vellappayin dammaar  Vitex altissima Kankola Navilaadi Myrole Mayilellu  Vrightia tinctoria Kutajah Beppaale Dudhi Kotakappala  Vimenia americana Neggaare, Nagare  Viziphus mauritiana Kolah Elachi, Bore Ber Ilantha	Vateria indica Ajakarna Saalu dhoopa Saphed dammaar  Vitex altissima Kankola Navilaadi Myrole Mayilellu Mayilaadi  Virightia tinctoria Kutajah Beppaale Dudhi Kotakappala Vetpaalai  Virightia americana Neggaare, Nagare Kataliranchi  Viziphus mauritiana Kolah Elachi, Bore Ber Ilantha Ilandai	Vateria indica Ajakarna Saalu dhoopa Saphed dammaar  Vitex altissima Kankola Navilaadi Myrole Mayilellu Mayilaadi Nemaliadugu  Virightia tinctoria Kutajah Beppaale Dudhi Kotakappala Vetpaalai Chittankudu  Virightia americana Neggaare, Nagare Kataliranchi Nakkeru  Viziphus mauritiana Kolah Elachi, Bore Ber Ilantha Ilandai Regu

#### ERBS

l. No.

SI. No 

Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
Abelmoschus ficulneus		Sanna bende			Kattu-vendai	Nelabenda	White Wild Musk Mallow
Abelmoschus manihot	Jangli bhendi - Marathi		Jangli bhendi	Kantali - Gujarati			Sweet Hibiscus
Abelmoschus moschatus	Latakasturika	Kasthuri bende	Mushk-dana	Kattu kasturi	Kattu kasturi	Kasthuri benda	Musk Mallow
Acalypha indica	Aritamanjari	Kuppe soppu	Kuppi	Kuppameni	Kuppaimeni	Kuppaichettu	Indian Copperleaf
Achyranthes aspera	Apamarga	Uttaraani	Chirchira	Kataladi	Naayuruvi	Uthareni	Prickly Chaff Flower
Acorus calamus	Vacha	Baje	Safed Bach	Vayambu	Vasambu	Vasa	Sweet Flag
Aerva lanata	Bhadra	Bili hindi soppu	Chaya	Cherula	Siru peelai	Pindiconda	Mountain Knot Grass
Aeschynomene aspera	Damana	Alagina gida	Sola	Neeli thaali	Aatrru netti	Jilugu	Shola Pith
Agave sisalana		Boodu kathaale	Kohar patha				Sisal Agave
Alhagi pseudalhagi	Durlabha			Katalaadi		Tella-giniya	Camel Thorn
Allium tuberosum							Garlic Chives
Aloe vera	Kumari	Lolesara	Kumari	Kattaarvaazha	Sotru katraalai	Kalabanda	Aloe Vera
Alpinia calcarata	Rasna bheda	Dumpa raasme	Barakulanjan	Chittaratta	Arathai	Dumparashtrakamu	Snap Ginger
Alpinia galanga	Rasna	Raasna	Bara-kalijan	Aratha	Chitrarathai	Pedda-dumpa- rashtrakam	Greater Galangal

SI. No.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
15	Amaranthus spinosus	Tanduliyah	Mullu keere soppu	Kantelu marsu	Mullancheera	Mullukkeerai	Nalladoggali	Prickly Amaranth
16	Amorphophallus paeniifolius	Suranah	Kaadu suvarna gadde	Jangli soorana	Kaattu-chena	Karunai kilangu		
17	Ananas comosus	Anannasa	Ananas	Ananas	Kaithachakka	Annaasi pazham	Anasa-pandu	Pineapple
18	Andrographis paniculata	Kirathathikta	Nelabevu	Kirayat	Kiriyath	Nila Vembu	Nelavemu	Kariyat
19	Anisochilus carnosus	Induparni	Karpoorada gida	Panjiri-ka-pat	Kattukoorkka	Karpooravalli	Karpuravalli	Kapurli
20	Aponogeton natans	Kangii	Neeru balli	Ghechu	Parra kizhangu	Kotti kizhangu	Nava dumpa	Floating Lace Plant
21	Bacopa monnieri	Brahmi	Neeru Brahmi	Brahmi	Brahmi	Neer brahmi	Brahmi	Brahmi
22	Barelaria cristata	Kurubakah	Kaadu sphatika	Kala-bansa	Kanakaambaram	Vellai nilambaram	Nallapeddagoranta	Striped Philippine Violet
23	Begonia malabarica				Malayamkizzhangu	Narayana sanjeevini		East Himalayan Begonia
24	Bergenia ciliata	Pashanabheda		Pashan-bhed				Frilly Bergenia
25	Biophytum sensitivum	Samanga	Horamucchuga	Lajalu	Mukkutti	Thottal vaadi	Jala puspa	Little Tree Plant
26	Boerhavia diffusa	Punamava	Komme soppu	Gadahpurna	Thazhuthama	Mookkirattai	Punamava	Red Spiderling
27	Caladium bicolor				Caladium			
28	Capsicum frutescens	Maricha	Holada menasina gida	Lalmirch	Kappalamulaku	Milagaai	Mirapa	Chilli
29	Caralluma adscendens var.attenuata		Mangatte/ Bodubakle		Pongankeera	Kalli mulaiyaan		
30	Caralluma umbellata		Hucchu mangatte			Eluman	Kundelu kommulu	
31	Cassia absus	Kulatthika	Kaadu huruli	Chaksu	Karinkolla	Mulaippalvirai	Chanupalavittulu	Tropical Sensitive Pea
32	Cassia italica	Bhutalapota	Nelavarike	Hindi-sana	Vattan-thakara	Nilavaakai	Nelathangedu	
33	Cassia occidentalis	Kasamarda	Kolu tagase	Kasondi	Ponnaraveram	Ponnaavirai	Kasinda	Coffee Senna
34	Cassia tora	Chakramarda	Tagache	Chakunda	Takara	Thagarai	Tantiyamu	Stinking Cassia
35	Catharanthus roseus	Nityakalyani	Kempu kaasi kanigalu	Sada bahar	Savam-naaripoovu	Nithyakalyani	Billaganneru	Periwinkle
36	Centella asiatica	Brahmi	Ondelega	Mantukaparni	Kudangal	Vellaarai	Saraswatiaku	Indian Pennywort
37	Chlorophytum	Musali	Eerulli yele gida	Safed musli	Nilappana			

arundinaceum

SI. No.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
38	Chlorophytum borivillianum	Musali -bheda		Safed musli	Nilappana		3	Safed Musli
39	Chlorophytum tuberosum	Musali	Dravanti	Safed musali	Nilappana	Tiravantikam	Kuchhela	Edible Chlorophytum
10	Codariocalyx motorius		Naaga thagare	Dudli	Thozhukanni			Telegraph Plant
11	Coleus aromaticus	Karpuravalli	Dodda pathre	Patta ajavauin	Panikoorkka	Karpuravalli	Karuvaeru	Cuban Oregano
2	Coleus zeylanicus	Valakah			Iruveli	Kuruvaer		
3	Colocasia esculenta	Aalookam	Kesuvina gedde, Kari Kesuvu	Arvi	Chaembu	Oma valli	Chemagadda	Green Taro
4	Crinum asiaticum	Naagadamani	Vishamungali	Chintaar	Puzhatthaali		Kesarchettu	Grand Crinum Lily
5	Crinum defixum	Sukhadarshan		Pindar	Veluttha puzhatthaali	Chaempu	Kesarchettu	River Crinum Lily
6	Crotalaria retusa	Shanapushpi	Gejje kaayi gida	Khunkhuniya	Kilukiluppa	Vishamoongil	Pottigilligichcha	Rattleweed
7	Curculigo orchioides	Talamuli	Nela thaale	Kali musli	Nilappana	Vishamoongil	Nela thaati	Golden Eye Grass
8	Curcuma longa	Haridra	Arishina	Haldi	Manjal	Kilukiluppai	Paspu	Turmeric
9	Curcuma pseudo- montana	Vana-haridra		Jangli haldi	Kaattumanjal	Nilappanai		Hill Turmeric
)	Curcuma zedoaria	Karchura-bheda		Kachura	Manjakoova	Manjal		Zedoary
1	Cymbopogon citratus	Bhustrina	Nimbe hullu	Gandhatran	Vasanapullu	Kattu manjal	Nimmagaddi	Lemon Grass
2	Cymbopogon martinii	Rohisa	Kaashihullu	Makora	Sambharpullu	Kichili kilangu	Nimmagaddi	Ginger grass
3	Cynodon dactylon	Doorva	Garike hullu	Dhub ghas	Karukapullu	Vasanai pullu/ Elumichan pullu	Garike	Bermuda Grass
1	Cyperus rotundus	Musta	Thunge gedde	Motha	Mutthanga	Kaavattam pul	Mustakamu	Common Nut Sedge
j	Datura metel	Dhathura	Ummathi	Dhatura	Ummam	Arugampullu	Ummatha	Datura Triple Yellow
3	Desmodium gangeticum	Salaparni	Saalaparni	Saalpaan	Orila	Korai	Kolakuponna	Sal Leaved Desmodium
	Dipteracanthus patulus				Upu-dali	Oomathai		
	Dipteracanthus prostratus				Thuppalampotti	Orilai	Maanu pathri	Bell Weed
	Ecbolium viride	Sahacarah -Bheda	Hasiru Kanakambara	Udajat	Neelakurinji	Kiranti nayakam	Pacha vaadambaramu	Green Shrimp Plant
	Eclipta alba	Bhrngaraja	Garuga, Bhringaraaja	Bhangara	Kayyonni	Pottakanchi	Galagara	False Daisy

SI. No.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
61	Elephantopus scaber	Gojihva	Naayi naalige gida	Gojihva	Aanachuvadi	Pacchai kanakambaram	Hasthikasaka	Elephant Foot
62	Eryngium foetidum		Kaadu kothambari		African malli	Karisilaankanni		Long Coriander
63	Eupatorium triplinerve	Ayaaparna	Aayaa paana	Ayaapaan	Ayyapana	Anaichuvadi		
64	Evolvulus alsinoides	Vishnukrantha	Vishnukraanthi	Vishnukrantha	Vishnukranthi	Kaatu kothamalli	Vishnukranthi	Dwarf Morning Glory
65	Fragaria vesca			Strawberry		Aayappanai		Strawberry
66	Glycyrrhiza glabra	Yashthimadhu	Yashthimadhu	Jetimad	Irattimadhuram	Vishnu kiranthi	Atimadhuramu	Licorice
67	Hemigraphis colorata				Murikootti			Tincture Plant
68	Hemigraphis latebrosa	Sarambal – Marathi				Athimaturam/ Iratti maduram		
69	Hibiscus trionum				Cemparavalli	Tincture chedi		
70	Houttuynia cordata			Simdalu				Chameleon Plant
71	Hybanthus enneaspermus	Padmacarini	Purusharatna	Ratanpurus	Orilathaamara		Rathnapurusha	Spade Flower
72	Hydrolea zeylanica	Langali	Laangalika		Cheruvallel		Neeli nakshathralu	Ceylon Hydrolea
73	Hygrophila schulli	Kokilaksah	Golimidi	Gokshura	Vayalchulli	Orithal thaamarai	Neerugobbi	Marsh Barbel
74	Hyptis suaveolens	Bhustrna	Ganga thulasi	Vilayati tulsi	Seemathulasi		Seema thulasi	American Mint
75	Imperata cylindrica	Darbha	Sanna darbhe hullu	Sauraun	Darbhapullu	Neer mulli	Dharba gaddi	Cogon Grass
76	Kaempferia galanga	Karcurah	Nela sampige	Chandramula	Kaccholam		Candramula	Aromatic Ginger
77	Kaempferia rotunda	Bhuchampaka	Nela sampige	Buichampa	Chengazhineer kizhangu	Dharbai pullu	Kondakaluva	Bhumi Champa
78	Kalanchoe laciniata	Hemasagara	Gandu kalinga	Hamsagar	Ashtthi-bhaksha	Kaccholam	Sima-jamudu	
79	Kalanchoe pinnata	Parna beeja	Kaadu basale	Zakhmhaiyat	llamulachi	Karunkuvalai	Ranapala	Air Plant
80	Knoxia sumatrensis					Malaikkalli		Knoxia
81	Lobelia nicotianaefolia	Devanala	Kaadu- hogesoppu	Nala	Kattupukayila	Irana kalli/ Kattipottaal kutti podum	Adavi-pogaku	Wild Tobacco
82	Malachra capitata	Van bhendi – Marathi						Brazil Jute
83	Malva sylvestris		Sanna bindige gida	Gurchanti		Kattu pugaiyilai		High Mallow

No.	Name of species	Sanskrit	Kannada	Hindi	Malayalam	Tamil	Telugu	English
	Melissa officinalis							Lemon Balm
	Mentha piperita	Pudiha	Pudina soppu	Gamathi pudina	Seemapodina		Pudina	Peppermint
	Merremia emarginata	Akhukarni		Musakani	Elichevi	Parsikanchankorai	Elika jimudu	Kidney Leaf Morning Glory
	Mimosa pudica	Lajjalu	Muttidare muni	Lajwanti	Thottavaadi	Pudhina	Peddanidrakanti	Touch Me Not
	Monochoria vaginalis	Indivarah	Neelothpala	Nanka	Kolachembu	Elikkaadhu keerai	Nirokancha	Oval Leaf Pondweed
	Nelumbo nucifera	Kamalam	Thavare	Kanval	Thaamara	Thottal sinungi	Thamara	Lotus
	Nicotiana tabacum	Tamaakhu	Hogesoppu	Tampaaku	Pukayila		Pogaaku	Tobacco
	Nymphaea pubescens	Kumuda	Kennaidile, Naidile	Kamal	Ambal	Thaamarai	Chitti kaluva	White Water Lily
	Ocimum americanum	Aranyatulasi	Naayi thulasi	Jangli tulsi	Kattuthulasi	Pugaiyilai	Kukkatulasi	Hoary Basil
	Ocimum basilicum var. basilicum	Barbari	Kamakasthuri	Babautitulasi	Ramathulasi	Alli	Bhuthulasi	Basil
	Ocimum basillcum var. purpurescense					Kanjankorai/ Naai thulasi		Basil
	Ocimum gratissimum	Van tulsi	Nimbe thulsi	Ban tulsi	Aanathulasi	Thiruneetru pacchilai	Nimma tulasi	
	Ocimum kilimandscharicum	Karpuratulasi	Karpura thulasi	Kapurtulsi	Karppurattulasi	Thiruneetru pacchilai	Karpuratulasi	
	Ocimum tenulflorum (Green)	Tulasi	Thulasi	Tulsi	Thulasi	Vana thulasi	Tulasi	Holy Basil
	Ophiopogon intermedius var. pauciflorus					Karpoora thulasi		
	Origanum majorana	Marubaka	Maruga	Murwa	Maruvam	Thulasi	Maruvamu	Sweet Marjoram
	Oxalis corniculata	Cangeri	Pullamparchi	Amrul	Puliyaarila	Keeri poondu	Puli-chintaku	Creeping Wood Sorrel
	Pancratium triflorum				Kaattu ulli	Maruvu		Pankusum
	Pavonia odorata	Hrebera-bheda	Balaraksi	Sugandhabala	Eruvaeli	Puliyaarai	Chittibenda	Fragrant Swamp Mallow
	Pelargonium graveolens		Panneer pathre	Geranium				Rose Geranium
	Phyla nodiflora	Jalapippali	Neeru hippali	Jal pipali	Neerthippali	Paeraamutti	Bokkena	Frog Fruit
	Phyllanthus amarus	Bhumyamalaki	Nelanelli	Bhu amla	Keezharnelli		Nela usiri	Carry Me Seed

SI. N

)5

SI. No.	Name of species	Sanskrit	Kannada	Hìndi	Malayalam	Tamil	Telugu	English
106	Phyllanthus debilis			Bhu amla		Poduthalai		
107	Piper mullesua	Pippali bheda		Thipali	Kattu thippali	Keezha nelli	Sevasu	
108	Plectranthus vetiveroides	Valakah	Lavanchi	Valak	Iruveli	Kaattu thippali	Kuriveru	
109	Pogostemon patchouli	Pachi	Pachetene	Pachauli	Pacchila	Kadir pachai/ Pacholi		Patchouly
110	Polianthes tuberosus	Rajanigandha	Sugandha raaja	Rajanigandha	Sambanji	Nila Sampangi	Nelasampenga	Rajanigandha/ Tuberose
111	Polygonum capitatum							Pink Knotweed
112	Polygonum glabrum		Neeru kanigalu		Chuvanna mudhala mookku	Aatru alari	Neeru ganneru	Denseflower Knotweed
113	Portulaca oleracea	Lonika	Dodda goni soppu	Khursa	Kozhuppa	Parupukkeerai	Pedda pavali kura	Purslane
114	Remusatia vivipara	Laksmana	Kadu gadde		Marachembu			Shield Leaf Ariopsis
115	Rhinacanthus nasuta	Yuthikaparni	Nagamallige	Palakjuhi	Nagamulla	Naagamalli	Naagamalle	Snake Jasmine
116	Ruta chalapensis	Sitabha	Naagadaali, Molekaalina soppu	Sadab	Aruta	Aruvadaampachai	Sadapaku	Rue
117	Saccharum spontaneum	Kasa	Darbhe	Kans	Naanal	Naanal	Kaki-cheraku	Kans Grass
118	Salvia officinalis		Sanna karpoorada gida	Seesti				Common Sage
119	Scilla hyacinthina		Kaadu bellulli			Kattu velvenkayam	Adavitheela gadda	South Indian Squill
120	Sebastiana chamaelea							Creeping Sebastiana
121	Sida acuta	Bala	Kallangadale	Naagabala	Malamkurunthotti	Arivaalmanai poondu	Chitimuti	Common Wireweed
122	Sida cordata	Nagabala	Bekkinathale gida	Adiobal	Vallikkurunthotti	Pazhampaasi	Gayapaku	Long-Stalk Sida
123	Sida cordifolia	Bala	Hettutti	Bala	Aanakurunthotti	Arivalmookkan	Chriubenda	Heart-Leaf Sida
124	Solanum melongena var. incanum	Vartaki	Gulla badane	Jungli baingan	Vazhuthana	Mullankattari	Verri vanga	Kumarika
125	Solanum nigrum	Kakamachi	Kaaki Hannu	Makoi	Manathakkali	Manathakkaali	Kachi	Black Nightshade
126	Solanum surattense	Kantakari	Nelagulla	Kateli	Kantakaarichunta	Kantankatthiri	Challamulaga	Thorny Nightshade

SI. No.	Name of species	Sanskrit	Kannada	Hinai	Malayalam	Tamil	Telugu	English
127	Solanum violaceum	Brhati		Badikateri	Cheruchunda			
128	Spilanthes calva		Hommugali	Kadkada	Palluvedana chedi	Angaravalli/ Akkaaraa		Toothache Plant
129	Spilanthes oleracea	Akalkar	Vanamugali 6	Pakamul		Vanamukali	Maratitige	Brazilian cress
130	Tacca leontopetaloides	Surana	Kaadu suvarna gadde	Surna	Kattuchena	Kaattu karunai	Peddakandagadda	Fiji Arrowroot
131	Thalictrum foliolosum	Trayamana- bheda		Mamira		Pitha rokini	Garbeeni	Leafy Meadow-Rue
132	Theriophonum minutum							
133	Thymus vulgaris		Thyme	Ban jawain				Common Thyme
134	Tragia plukenetii	Agya – Marathi				Chenthatti		
135	Trapa natans	Srngataka	Singhaade	Singhara		Sinkaara	Kubyakam	Water Chestnut
136	Trichopus zeylanicus ssp. travancoricus				Aarogya paccha	Aarogya pachai		
137	Uraria picta	Prsniparni			Moovila	Siru palathai		
138	Vernonia cinerea	Sahadevi	Sahadevi	Sahadevi	Poovaamkurunnila	Seedevi sengazhuneer	Gharitikamini	Purple Fleabane
139	Vetiveria zizanioides	Usira	Laavancha	Khas	Ramaccham	Vettiver	Vattiveru	Vetiver
140	Wedelia calandulacea	Peetha bhringaraja	Haladi garuga	Bhangra	Manja kaiyooni	Manjal karisilanganni	Pasupu garugalu	
141	Withania somnifera	Ashvagandha	Hiriemaddina gida, ashvagand- ha	Asgandh	Amukkuram	Amukkara	Asvagandhi	Ashwagandha
142	Zingiber cassumunar	Vanardraka	Kadushunti	Banada	Malayinchi	Vana athirakam	Karupasupu	Cassumar Ginger
43	Zingiber officinale	Adrakam	Shunti	Adrak	Inji	Inji	Allam	Ginger
44	Zingiber zerumbet	Sthulagranthi	Kallushunti	Narkachur	Kattinji	Kaatu inji	Santapasupu	

## REFERENCES

Ahmedulla, M. & M.P. Nayar. 1987. Endemic Plants of the Indian Region. Vol. 1. BSI Calcutta

Anonymous, 1948, 1950, 1952, 1956, 1959, 1962, 1966, 1969, 1 972,1976, 1976a. The Wealth of India Vol. 1 to 11. C.S.I.R., New Delhi.

Anonymous, 1994, Indian Medcinal Plants: a compendium of 500 species, Vol. 1 to 5. Orient Longman Ltd. Madras.

Balakrishnan, N.P. 1966. Nomenclatural notes on some flowering plants. In J. Nat. Hist. Soc., Bombay

Beddome, R.H. 1869-1874. The Flora Sylvatica of southern India. Vols. 1 & 2. Gantz Brother, Madras.

Bennet, S.S.R. 1987. Name changes in flowering plants of India and adjacent regions. Triseas Publications, Dehra Dun.

Benthem, G & J.D. Hooker. 1862-1883. Genera Plantarum Vols.1 - 3. L. Reeve & Co., London.

Bhandari M.M. 1978. Flora of the Indian Desert. MPS Repro, Jodhpur.

Chopra, R.R., S.L. Nayar & I.C. Chopra. 1956. Glossary of Indian Medicinal Plants. NISCAIR, New Delhi.

Choudhari, A.B. 1993. Forest plants of Eastern India. Ashish Publishing House, New Delhi.

Cook. T. 1901-1908. Flora of the Presidency of Bombay. Vols. 1-3. (repr. Ed.) 1958. Botanical Survey of India. Calcutta.

Dasanayake, M.O. & F.R. Fosberg (eds.). 1980-1983. A revised handbook of the Flora of Ceylon. Vols. 1-4. Oxford & I.B.H. New Delhi.

David Squire. 2002. Small Gardens - The Essentials Collection . Parragon Publishers, United Kingdom.

Etelka Leadlay and Jane Greene(eds.). 1998. The Darwin Technical Manual for Botanic Gardens. Botanic Gardens. Conservation International, United Kingdom.

Fyson, P.F. 1986. The Flora of the South Indian hill stations,

Vols. 1 & 2. Periodical Expert Book Agency, Madras.

Gamble, J.S. and C.E.C. Fischer. 1915-1936. Flora of the Presidency of Madras. Vols. I-III. Adlard & Son Ltd., London.

Gopalakrishna Bhat, K. 2003. Flora of Udupi. Indian Naturalist, Udupi.

Govindu, H.C. & M.J. Thirumalachar. 1952. Grass flora of Mysore. In Coll. Agri. Tech. Bull. 1: 1-33.

Henry, A.N., G.R. Kumari & V. Chitra. 1983-1989. Flora of Tamil Nadu, India. Series I.: Analysis. Vols. 1-3. Botanical Survey of India. Coimbatore.

Henry, A.N., Vivekanandan & N.C. Nair. 1978. Rare and threatened flowering plants of south India. In J. Bombay Nat. Hist. Soc. 75: 684-697.

Hooker, J.D. 1872-1897. The Flora of British India. Vols. I-VII. L. Reeve & Co., London. (Rep. ed. 1992 - Bishen Singh Mahendra Pal Singh, Dehra Dun.)

Keshavamurthy, K.R. and S.N. Yoganarasimhan. 1990. Flora of Coorg (Kodagu), Karnataka, India. Vimsat Publishers, Bangalore.

Kirthikar, K.R. & B.D. Basu. 1935 (repr. 1975). *Indian* Medicinal Plants (ed. 2) Revised by E. Blattter, J.F. Caius & K.S. Man. Bishen Singh Mahendra Pal Singh, Dehra Dun.

Kothari, M.J. & S. Moorthy. 1993. Flora of Raigad District. Maharastra State. Flora of India. Series 3. Botanical Survey of India, Calcutta.

Lakshmi Narasimhan, P. & B.D. Sharma. 1991. Flora of Nasik District. Flora of India. Series 3. Botanical Survey of India. Calcutta.

Linnaeus, C. 2001. Species Plantarum. Vols. 1 & 2. Bishen Singh Mahendra Pal Singh, Dehradun.

Linnaeus, Fil. 1781. Supplementum plantarum systematis vegetabilium etc. Brunsuigae.

Loureiro, J. de. 1790. Flora of cochinchinensis: Sistens

plantas in regno Cochinchina etc. Vols. 1 & 2. Ulyssipone; Typis. et expensis Academicia, Lisbon.

Lushington, A.W. 1915. *Vernacular list of trees, shrubs and woody climbers in the Madras Presidency.* Vols. 1 & 2, A & B. Government Press. Madras.

Maheshwari, J.K. 1966, 1983. *Illustrations to the Flora of Delhi*. CSIR, New Delhi.

Manjunatha, B.K., V. Krishna & T. Pullaiah. 2004. *Flora of Davangere District, Karnataka, India*. Regency Publications. New Delhi.

Nair, N.C., V.J. Nair and P. Daniel. 1996. *Botanical History*. In P.K. Hajra, B.D. Sharma, M. Sanjappa and A.R.K. Sastry (eds.). Flora of India. Introductory volume (Part I). Botanical Survey of India. Calcutta.

Nayar, M.P. 1996. *Hot Spots of Endemic Plants of India, Nepal and Bhutan*. Tropical Botanic Garden and Research Institute, Thiruvananthapuram.

Peter McHoy. 2004. *Practical Small Gardens*. Hermes House, United Kingdom.

Ramaswamy, S.N., M. Radhakrishna Rao and D.A. Govindappa. 2001. *Flora of Shimoga District, Karnataka.* Prasaranga, University of Mysore, Mysore.

Ramaswamy, S.V., and B.A. Razi. 1973. *Flora of Bangalore District*. Prasaranga, University of Mysore, Mysore.

Rao, R.R. 1994. Biodiversity in India (Floristic Aspects). Bishen Singh Mahendra Pal Singh, Dehra Dun.

Rao, R.R. and B.A. Razi. 1981. *A synoptic flora of Mysore District*. Today & Tomorrow's Printers and Publishers, New Delhi.

Ravikumar K. and Ved D.K. 100 Red-Listed Medicinal Plants of Conservation Concern in Southern India. Foundation for Revitalisation of Local Health Traditions, Bangalore.

Roth, A.W. 1821. Novae Plantarum Species. Praesertim India

Orientalis. Halberstadt; Sumptibus H. Vogleri.

Roxburgh, W. 1820-1824. *Flora Indica* (ed. Carey). Vols. 1-3. Serampore. Repr. ed. 1971. Today and Tomorrow's Printers and Publishers. New Delhi.

Roxburgh, W. 1980. *Hortus benghalensis*. Boerhaave Press, Leiden.

Saldanha, Cecil J. 1984 & 1996. *Flora of Karnataka*, Vols.I & II. Oxford & IBH Publishing Co., New Delhi.

Saldanha, Cecil J. and D.H. Nicolson. 1976. *The Flora of Hassan District*. Amerind Publishing Co., Pvt. Ltd., New Delhi.

Scott Atkinson. 2006. *Ideas for Great Patios & Decks*. Sunset Publishing Corporation, United States of America.

Seetharam, Y.N., K. Kotresha and S.B. Uplaonkar. 2000. *Flora of Gulbarga District*. Gulbarga University, Gulbarga.

Sharma, B.D., N.P. Singh, R.S. Raghavan and U.R. Deshpande. 1984. Flora of India. Ser. 2. *Flora of Karnataka-Analysis*. Botanical Survey of India, Calcutta.

Singh, N.P. 1988. *Flora of Eastern Karnataka*. Vols.I & II. Mittal Publications, Delhi.

Stapf, O. 1917-1930. Gramineae. In Prain, *Flora of Tropical Africa* 9: 1-768.

Stephen Anderton. 1999. *Rejuvinating a Garden*. Soma Books, United States of America.

Talbot, W.A. 1909. Forest Flora of the Bombay Presidency and Sind. Vols. I & II. Poona Govt., Poona.

Udayan P.S. and Indira Balachandran. 2009. *Medicinal Plants of Arya Vaidya Sala Herb Garden*. Arya Vaidya Sala, Kottakkal.

Yoganarasimhan, S.N. 1996. *Medicinal Plants of India. Vol. I-Karnataka*. Interline Publishing Co., Bangalore.

Yoganarasimhan, S.N., Subramanyam and B.A. Razi. 1982. Flora of Chikmagalur district. International Book Distributors. Dehra Dun.

## INDEX

Name of species	Page no	Name of species	Page no
Abelmoschus ficulneus	91	Adiantum caudatum	109, 111
Abelmoschus manihot	91	Adiantum concinum	109
Abelmoschus moschatus	91	Aegle marmelos	22, 74, 146
Abrus precatorius (red with black ends)	63	Aeridis crispa	106
Abrus precatorius (red)	63	Aeridis fieldingii	106
Abrus precatorius (white)	63	Aeridis multiflorum	106
Abutilon hirtum	50	Aeridis odorata	106
Abutilon pannosum	50	Aeridis rosea	106
Acacia spp.	13	Aeridis williamsii	106
Acacia caesia	63	Aerva lanata	91
Acacia catechu	74	Aeschynomene aspera	91
Acacia ferruginea	74	Agave sisalana	91
Acacia leucophloea	74	Alangium salvifolium	74
Acacia nilotica ssp. indica	74	Albizia amara	74
Acacia sinuata	63	Albizia lebbeck	74
Acalypha fruticosa	50, 121	Albizia odoratissima	74
Acalypha indica	91	Alhagi pseudalhagi	91
Acampe papillosa	108	Allamanda cathartica	63
Achyranthes aspera	91	Allium spp.	143
Aconitum ferox	22, 24, 27	Allium tuberosum	91
Acorus calamus	91, 119	Allophyllus cobbe	50
Actiniopteris radiata	109, 111	Alocasia macrorhiza	50, 119
Adenanthera pavonina	74	Aloe vera	23, 26, 29, 31, 39, 91, 120
Adenia hondala	23, 26, 29, 32, 63	habit	149
Adenia wightiana	63	propagation	149
Adhatoda beddomei	32, 50	Alpinia spp.	143
Adhatoda zeylanica	23, 24, 27, 30, 50, 118, 143, 146	Alpinia calcarata	23, 24, 27, 30, 92
habit	149	Alpinia galanga	92
propagation	149	Alstonia scholaris	74

Name of species	Page no	Name of species	Page no
Alstonia venenata	50	Asparagus adscendens	64
Alternanthera spp.	118	Asparagus gonoclados	64
Amaranthus spinosus	92	Asparagus officinalis	64
Amorphophallus paeniifolius	32, 92	Asparagus racemosus	23, 25, 26, 28, 29, 31, 64, 143
Anacardium occidentale	74	Asplenium dalhousiae	109, 111
Ananas comosus	92	Asplenium nidus	109
Andrographis paniculata	22, 24, 27, 30, 92	Asystasia dalzelliana	50
habit	149	Atalantia monophylla	75
propagation	149	Averrhoa carambola	50
Angiopteris evecta	109	Azadirachta indica	22, 24, 27, 30, 75, 141, 143
Anisochilus carnosus	92	Azolla pinnata	109
Anisomeles malabarica	50	Bacopa monnieri	23, 25, 28, 31, 92, 119, 146
Annona squamosa	75	Balanites aegyptiaca	75
Anthocephalus cadamba	75	Baliospermum montanum	32, 51
Aponogeton natans	92	Bamboos	112-115
Aponogeton perfoliatus	119	Bambusa arundinacea	115
Aquatic garden	20, 117, 118, 119	Bambusa bambos	114
Aquilaria malaccensis	75	Bambusa glaucescens	113, 114
Argyreia cuneata	63	Bambusa nutans	114
Argyreia nervosa	60, 63, 121	Bambusa tulda	114
Aristolochia indica	63	Bambusa vulgaris var. striata	112, 114
Aristolochia tagala	32, 64	Bambusa vulgaris var. wamin	114
Artabotrys odoratissimus	63	Bambusa wamin	114
Artemisia nilgirica	50	Barleria cristata	92
Artocarpus heterophyllus	75	Barleria prionitis	49
Artocarpus hirsutus	32, 75	Barleria spp.	13
Artocarpus lakoocha	75	Barringtonia acutangula	75, 119
Arundina graminifolia	106	Barringtonia racemosa	119
Arundinaria spp.	113, 114	Basella alba	64, 143, 146
Asclepias curassavica	22	Basella rubra	121
Ashokavana	13	Bauhinia acuminata	51

Name of species	Page no	Name of species	Page no
Bauhinia purpurea	75	Calotropis gigantea (white flowered)	51
Bauhinia racemosa	75	Calotropis gigantea (purple flowered)	51
Bauhinia tomentosa	51	Calotropis procera	51
Bauhinia variegata	13	Cananga odorata	76
Begonia malabarica	92	Canarium strictum	32, 76
Bergenia ciliata	92	Cankers	146
Biophytum sensitivum	93	Canthium dicoccum	76
Bischofia javanica	76	Capparis zeylanica	64
Bixa orellana	51	Capsicum frutescens	93
Blechnum orientale	109	Caralluma spp.	120
Boerhavia diffusa	93	Caralluma adscendens var.attenuata	93
Bolbitis appendiculata	109	Caralluma umbellata	93
Bombax ceiba	76	Cardiospermum canescens	64
Borassus flabellifier	76	Cardiospermum helicacabum	23, 25, 28, 30, 64
Boswellia serrata	72, 76	Careya arborea	76
Brainea insignis	109	Carica papaya	23, 26, 29, 31, 77
Buddleja asiatica	51	habit	150
Bulbophyllum congestum	106	propagation	150
Bulbophyllum nilghrense	106	Carissa carandas	51
Bulbophyllum sterile	106	Caryota urens	77
Bulbostylis barbata	106	Cassia spp.	141
Butea monosperma	13, 76, 104	Cassia absus	93
Cadaba fruticosa	51	Cassia alata	52
Caesalpinia bonduc	23, 26, 29, 64	Cassia auriculata	23, 26, 29, 31, 52
Caesalpinia decapetala	64	Cassia fistula	13, 23, 25, 28, 30, 77
Caesalpinia pulcherrima	51	Cassia hirsuta	52
Caesalpinia sappan	76	Cassia italica	93
Caladium bicolor	93	Cassia occidentalis	93
Callicarpa tomentosa	51	Cassia roxburghii	77
Calophyllum apetalum	76	Cassia tora	93
Calophyllum inophyllum	76	Catharanthus roseus	22, 93

Name of species	Page no	Name of species	Page no
Cedrella toona	77	Cissus setosa	65
Ceiba pentandra	77	Citharexylum subserratum	77
Celastrus paniculatus	23, 25, 28, 32, 64	Citrus spp.	146
Centella asiatica	23, 25, 28, 31, 93, 119	Citrus aurantium	52
Ceratophyllum demersum	119	Citrus limon	77
Ceropegia candelabrum	65	Citrus maxima	52
Ceropegia juncea	65	Citrus medica	78
Cestrum diurnum	52	Clematis gauriana	65
Cestrum nocturnum	52	Clerodendrum colebrookianum	52
Cheilanthes albomarginata	109, 111	Clerodendrum inerme	52, 118, 121
Cheilanthes farinosa	108, 109	Clerodendrum paniculatum	52
Chimonobambusa	112	Clerodendrum phlomides	53
Chlorophytum arundinaceum	94	Clerodendrum serratum	53
Chlorophytum borivillianum	94	Clerodendrum viscosum	53
Chlorophytum tuberosum	94	Climate	20, 23, 24, 25, 27, 30, 48, 72, 125
Chloroxylon sweitenea	77	Climbers	60-70
Chonemorpha fragrans	32, 62, 65	Clitoria ternatea	121
Chukrasia tabularis	77	Clitoria ternatea (blue flower)	65
Cinchona officinalis	22, 24, 27	Clitoria ternatea (white flower)	66
Cinnamomum camphora	77	Cocculus hirsutus	66
Cinnamomum tamala	77	Cocos nucifera	78
Cinnamomum zeylanicum	52	Codariocalyx motorius	94, 121
Cipadessa baccifera	52	Coelogyne cristata	106
Cissampelos pareira var hirsuta	65	Coelogyne ovalis	106
Cissus discolor	65	Coelogyne punctata	106
Cissus quadrangularis	39, 120	Coelogyne stricta	106
Cissus quadrangularis (4-angled stem)	65	Coleus aromaticus	23, 24, 27, 30, 94, 143, 146
Cissus quadrangularis (bluntly 4-angled	65	habit	150
stem)		propagation	150
Cissus quadrangularis (cylindrical stem)	65	Coleus zeylanicus	94
Cissus quadrangularis (flat stem)	65	Colocasia esculenta	94

Name of species	Page no	Name of species	Page no
Colysis hemionitide	109	Cymbidium pendulum	106
Commiphora wightii	32, 78	Cymbopogon spp.	125
Containers	49, 89, 105, 136, 141, 147	Cymbopogon citratus	23, 24, 27, 30, 95, 143
Corallocarpus epigaeus	66	Cymbopogon martinii	95
Cordia dichotoma	13, 78	Cynodon dactylon	95
Cordia wallichii	13, 78	Cyperus rotundus	95
Corymborchis veratrifolia	106	Dactylorhiza hatagirea	106
Coscinium fenestratum	32	Dalbergia latifolia	78
Costus spp.	125	Dalbergia paniculata	78
Costus speciosus	48, 53	Damping off	146
Crataeva nurvala	78	Data deficient	34
Crinum asiaticum	94	Datura metel	95
Crinum defixum	94	Davallia trichomanoides	110
Critically endangered	21, 34	Decalepis hamiltonii	22, 32, 66
Crotalaria retusa	94	Delonix elata	23, 25, 28, 78
Croton oblongifolium	78	Dendrobium aduncum	106
Crown	71, 72, 125	Dendrobium aggregatum	106
Cryptolepis buchananii	66	Dendrobium amoenum	106
Cryptostegia grandiflora	66, 121	Dendrobium chrysanthum	106
Curculigo orchioides	23, 25, 28, 31, 94	Dendrobium coerulescens	106
Curcuma longa	94	Dendrobium crumentum	106
Curcuma pseudo-montana	32, 95	Dendrobium densiflorum	106, 108
Curcuma zedoaria	95	Dendrobium jenkinsii	106
Cyathea	108	Dendrobium macraei	106
Cyathea spinulosa	110	Dendrobium moschatum	106
Cycas beddomei	78	Dendrobium nobile	104, 106, 108
Cycas circinalis	32	Dendrobium ovatum	106
Cyclea peltata	66	Dendrobium paxtonii	106
Cymbidium aloifolium	106, 108	Dendrocalamus giganteus	112, 114
Cymbidium grandiflorum	106	Dendrocalamus strictus	112, 114
Cymbidium hookerianum	106	Desmodium gangeticum	95

Name of species	Page no	Name of species	Page no
Dichrostachys cinerea	78	Elephantopus scaber	96
Dicranopteris linearis	110	Elettaria cardamomum	53
Dillenia indica	13	Embelia ribes	32, 66
Dillenia pentagyna	79	Embelia tsjeriam-cottam	32, 67
Dinochloa compactiflora	113	Endangered	21, 34
Dinochloa mclelandii	113	Entrance sign	130
Dioscorea bulbifera	66	Equisetum diffusum	110
Dioscorea oppositifolia	66	Eranthemum capens	53
Dioscorea tomentosa	66	Eria calamifolia	106
Diospyros ebenum	79	Eria epidendraea	106
Diospyros melanoxylon	79, 104	Eria pannea	106
Diospyros montana	79	Ervatamia divaricata	53
Diplazium esculentum	109, 110, 111	Eryngium foetidum	96
Diplocyclos palmatus	66	Erythrina stricta	79
Dipteracanthus patulus	95	Erythrina variegata	79
Dipteracanthus prostratus	95	Erythroxylum monogynum	53, 121
Directional signs	129	Ethical signs	130
Divisions	143	Eupatorium triplinerve	23, 25, 28, 31, 96
Dodonaea viscosa	53	Euphorbia antiquorum	53
Dolichandrone atrovirens	79	Euphorbia nerifolia	22, 53, 120
Dolichandrone falcata	79	Euphorbia nivulia	53, 120
Downy mildew	146	Euphorbia splendens	54
Drynaria quercifolia	110	Euphorbia tirucalli	79, 120, 121
Dryopteris wallichiana	110, 111	Euryale ferox	54
Drypetes roxburghii	79, 121	Evolvulus alsinoides	22, 24, 27, 30, 96
Dysoxylum malabaricum	32	Extinct	21, 34
Ecbolium viride	95	Fagraea ceilanica	54
Eclipta alba	23, 26, 29, 31, 95	Ferns	108-111
Elaeocarpus floribundus	79	Ficus arnottiana	80
Elaeocarpus sphaericus	79	Ficus auriculata	80
Elaphoglossum beddomei	110	Ficus benghalensis	13, 80

Name of species	Page no	Name of species	Page no
Ficus carica	80	Glycosmis mauritiana	54
Ficus hispida	80, 119	Glycyrrhiza glabra	23, 24, 27, 30, 96
Ficus microcarpa	80	Gmelina arborea	81, 143
Ficus mollis	80	Gmelina asiatica	54
Ficus racemosa	23, 26, 29, 80	Goodyera repens	105, 106
Ficus religiosa	13, 80	Goodyera schlectandaliana	106
Filicium decipiens	80	Goodyera secundiflora	106
Flacourtia cataphracta	13, 80	Gossypium arboreum	54
Flemingia strobilifera	54	Gymnema khandalense	33
Flickingeria fugax	106	Gymnema sylvestre	61, 67
Flickingeria macraei	106	Gyrocarpus americanus	81
Flickingeria nodosa	106	Habenaria commelinifolia	106
Fragaria vesca	96	Habenaria crinifera	106
Frerea indica	22	Habenaria diphylla	107
Galls and tumours	146	Habenaria edgeworthii	107
Garcinia gummi-gutta	32, 80	Habenaria grandiflora	107
Garcinia indica	32, 81	Habenaria intermedia	107
Garcinia morella	32	Habenaria longicorniculata	107
Garcinia spicata	81	Habenaria orchidis	107
Garcinia xanthochymus	13, 81	Habenaria ovalifolia	107
Gardenia gummifera	33, 81	Habenaria plantaginea	107
Gardenia latifolia	81	Habenaria rariflora	107
Gardenia resinifera	81	Habenaria rotundifolia	107
Garuga pinnata	81	Habenaria roxburghii	107
Gendarussa vulgaris	118	Haldina cordifloia	81
Gendarussa vulgaris (green)	54	Hardwood cuttings	143
Gendarussa vulgaris (purple)	54	Hedges	20, 72, 89, 113, 117, 118, 125, 155
Gigantochloa atroviolacea	113, 114	Hedychium spp.	125
Givotia rottleriformis	81	Hedychium coronarium	33, 90, 119
Glochidion zeylanicum	81	habit	150
Gloriosa superba	33, 67	propagation	150

Name of species	Page no	Name of species	Danana
Helicteres isora	72	Hyptis suaveolens	Page no
Hemidesmus indicus	67	IAA	97
Hemigraphis colorata	96, 118	IBA	142, 143
Hemigraphis latebrosa	96	Ichnocarpus frutescens	142, 143
Hemionitis arifolia	110	Imperata cylindrica	67
Herbs	89-102	Indigofera tinctoria	97
Hibiscus spp.	141	Interactive signs	146
Hibiscus Iunarifolius	54	Ipomoea batatas	130
Hibiscus rosa-sinensis	13, 23, 26, 29, 31, 118, 146	Ipomoea mauritiana	67
h <b>a</b> bit	150	habit	23, 26, 29, 31, 60, 67, 121
propagation	150		150
Hibiscus rosa-sinensis (Red-flowered)	54	propagation  Ixora arborea	150
Hibiscus rosa-sinensis (White-flowered)	54		55
Hibiscus tiliaceus	82	Ixora coccinea	55
Hibiscus trionum	96	Janakia arayalpathra	22, 33, 55
		Jasminum spp.	13
Hildegardia populifolia	82	Jasminum angustifolium	55
Hiptage benghalensis	67	Jasminum auriculatum	67
Holarrhena pubescens	71, 121	Jasminum grandiflorum	67, 121
Holoptelea integrifolia	82	Jasminum malabaricum	67
Holostemma ada-kodien	33, 67	Jasminum sambac	55
Hopea parviflora	82	Jatropha curcas	55
Houttuynia cordata	96	Jatropha glandulifera	55
Humboldtia vahliana	82	Jatropha gossypifolia	55
Hura crepetans	82	Justicia betonica	55
Hybanthus enneaspermus	96	Kaempferia galanga	33, 97
Hydnocarpus macrocarpa	33	Kaempferia rotunda	97
Hydnocarpus pentandra	82	Kalanchoe spp	120
Hydrilla verticillata	119	Kalanchoe laciniata	97
Hydrolea zeylanica	96	Kalanchoe pinnata	39, 97
Hygrophila schulli	97	Kedrostis rostrata	68
Hymenodictyon orixense	82	Kigelia africana	82

Name of species	Page no	Name of species	Page no
Kingiodendron pinnatum	33, 82	Malaxis acuminata	107
Kleinia grandiflora	55	Malaxis biloba	107
Knema attenuata	33, 82	Malaxis mackinnonii	107
Knoxia sumatrensis	97	Malaxis muscifera	107
Lagerstroemia microcarpa	82	Malaxis rheedei	107
Landscape elements	16, 71, 89, 117,125	Malaxis saprophyta	107
Lawsonia inermis	55, 118	Malva sylvestris	97
Layout signs	130	Mammea suriga	83
Leaf spot	146	Mangifera indica	13, 83, 104
Leea indica	55	Manilkara hexandra	83
Leea macrophylla	56	Marsilea minuta	110
Lepisanthes tetraphylla	83	Maytenus emarginata	56
Leptadenia reticulata	68	Melaleuca spp.	121
Ligustrum spp.	121	Melia azedarach	16, 83
Limonia acidissima	83	Melissa officinalis	97
Liparis nervosa	107	Melocanna	115
Liparis parviflora	107	Memecylon spp.	119
Litsea chinensis	13	Memecylon umbellatum	83
Lobelia nicotianaefolia	97	Mentha piperita	98
Ludwigia adscendens	119	Merremia emarginata	98
Lycopodium	109	Mesua ferrea	13, 83
Lycopodium clavatum	108, 110, 111	Michelia champaca	13, 84
Lycopodium flegmarium	110	Microlepia trapeziformis	110
Lycopodium selago	110	Mimosa pudica	98
Lygodium flexuosum	110, 111	Mimusops elengi	72, 84
Macaranga peltata	83	Mitragyna parvifolia	84
Madhuca insignis	33	Mollugo cerviana	22, 24, 27
Madhuca longifolia	83	Momordica charantia	68
Madhuca nerifolia	33, 83	Momordica dioica	68
Maesa indica	83	Monochoria vaginalis	98
Malachra capitata	97	Morinda tinctoria	84, 104

Name of species	Page no	Name of species	Page no
Moringa concanensis	33, 84	Ochreinauclea missionis	33, 84
Moringa oleifera	23, 26, 29, 31, 84, 136, 143	Ocimum spp.	89, 141, 146
habit	150	Ocimum americanum	98
propagation	150	Ocimum basilicum	118
Mother beds	135, 136, 142, 145, 150, 151, 155	habit	151
Mounds	20, 89, 117, 121, 122	propagation	151
Mucuna pruriens	23, 25, 26, 28, 68	Ocimum basilicum var. basilicum	98
Mukia maderaspatana	58	Ocimum basilicum var. purpurescense	98
Mundulea sericea	56	Ocimum canum	22, 24, 27, 30
Muntingea calabura	84	Ocimum gratissimum	89, 98, 121
Murraya koenigii	56, 141	Ocimum kilimandscharicum	89, 98, 118
Murraya paniculata	56	Ocimum sanctum	89, 118
Musa paradisiaca	84	Ocimum tenuiflorum	22, 23, 24, 27, 30, 89, 99
Myristica dactyloides	33	habit	151
Myristica malabarica	33	propagation	151
Nardostachys jatamanshi	23, 24, 27	Oldenlandia corymbosa	22
Nelumbo nucifera	98, 119	Oleandra wallichii	110, 111
Nepenthes khasiana	56	Onychium siliculosum	108, 110, 111
Nephrolepis auriculata	110, 111	Operculina turpethum	33, 68
Nephrolepis bulgifera	111	habit	151
Nephrolepis cordifolia	110	propagation	151
Nervilla aragoana	33	Ophloglossum reticulatum	110, 111
Nicotiana tabacum	98	Ophiopogon intermedius var. pauciflorus	99
Niligirianthus ciliatus	33, 56	Opuntla dillenli	56
Nothapodytes nimmoniana	33, 84	Orchids	103-108
Nursery beds	135, 136, 155	Origanum majorana	99
Nyctanthes arbor-tristis	56, 136	Oroxylum Indicum	33, 84
Nymphaea pubescens	98, 119	habit	151
Nymphoides indica	119	propagation	151
Ochlandra	113, 114	Orthodox seeds	141
Ochna obtusata	56	Orthosiphon aristatus	118

Name of species	Page no	Name of species	Page no
Osmunda japonica	110, 111	Pholidota imbricata	108
Osmunda regalis	110, 111	Phyla nodiflora	99
Oxalis corniculata	99	Phyllanthus acidus	85
Oxystelma secamone	121	Phyllanthus amarus	99
Pachygone ovata	68	Phyllanthus debilis	99
Paederia foetida	68	Phyllanthus emblica	85
Pallor	146	habit	152
Pancratium triflorum	99	propagation	152
Pandanus odoratissimus	56, 119	Phyllanthus Indo-fischeri	85
Paphiopedillum druryl	103, 107	Phyllanthus polyphyllus	57
Papillonanthe teres	107, 108	Phyllanthus reticulatus	57
Paspalum scrobiculatum	13	Phyllostachys spp.	114, 115
Passiflora spp.	121	Phyllostachys nigra	113
Passiflora edulis	68	Phyliostachys pubescens	113
Passifiora foetida	68	Phymatosorum nigriescens	110
Paths	37, 117, 121, 122	Pimenta officinalis	57
Pavetta Indica	56	Pinus spp.	121
Pavonia odorata	99	Pinus roxburghii	85
Pedallum murex	23, 26, 29, 31	Pinus wallichlana	85
Pelargonium graveolens	99	Piper betle	69
Pergularia daemia	68	Piper longum	23, 24, 27, 30, 33, 61, 69, 143
Persea macrantha	33, 84	habit	152
Phaius grandifolium	107	propagation	152
Phaius tankervilleae	103, 107	Piper mullesua	33, 99
Phaius wallichli	107	Piper nigrum	33, 69
Phalenopsis amabilis	107	habit -	152
Phegopteris auriculata	110, 111	propagation	152
Phenology	34	Pistia stratiotes	119
Phoenix humilis	67	Plant signage	130
Phoenix sylvestris	85	Plectranthus vetiveroides	13, 99
Pholidota chinensis	107	Pleiospermium alatum	57

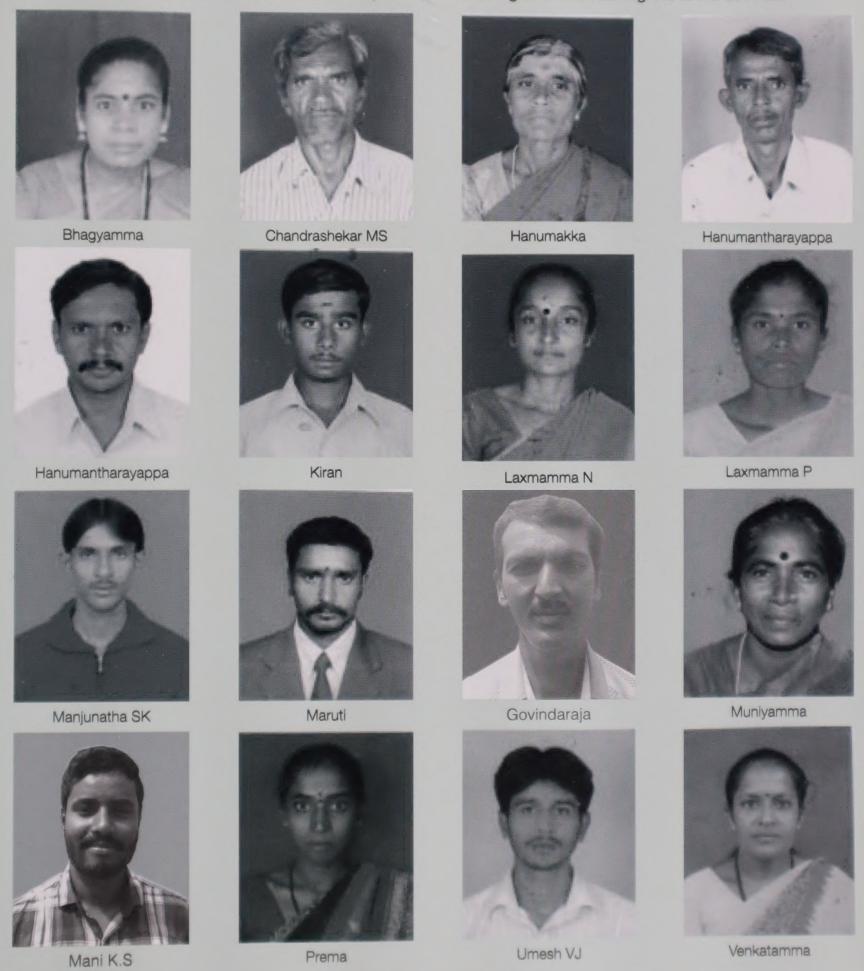
Name of species	Page no	Name of species	Dana na
Pleurostylia opposita	85	Pteris cretica	Page no
Plumbago spp.	48, 49	Pteris scabripes	110
Plumbago auriculata	48, 57	Pterocarpus marsupium	
Plumbago rosea	48, 57	Pterocarpus santalinus	23, 26, 29, 86 23, 26, 29, 34, 86
Plumbago zeylanica	23, 25, 28, 30, 48, 57, 118	Pterolobium hexapetalum	69
Plumeria alba	85	Pterospermum acerifolium	86
Plumeria rubra	85	Pueraria tuberosa	34, 69
Pogostemon patchouli	100	Punica granatum	23, 26, 29, 31, 57, 143
Polianthes tuberosus	100	habit	152
Polyalthia korinti	57	propagation	152
Polyalthia longifolia	85, 121	Quisqualis indica	69
Polygonum capitatum	100	Radermachera xylocarpa	86, 121
Polygonum glabrum	100	Rauvolfia serpentina	34
Polystichum aculeatum	110	Rauvolfia tetraphylla	58
Polystichum squarrosum	110, 111	Recalcitrant seeds	141
Pongamia pinnata	16, 85, 146	Remusatia vivipara	100
Portulaca oleracea	100	Rhaphidophora pertusa	34
Pouzolzia bennetitiana	119	Rhinacanthus nasuta	100
Pouzolzia zeylanica	121	Rhynchosia cyanosperma	121
Premna serratifolia	57	Rhynchostylis retusa	107, 108
Priva leptostachya	57	Rockery	37, 39, 114, 117, 119, 120
Propagation materials	141	Rosa damascena	69, 121
Pruning -	48, 49, 60, 61, 71, 114, 124, 125, 147, 155	Rosa sericea	58
Prunus cerasoides	85	Root initiation	142
Prunus laurocerasus	86	Root initiators	142
Pseudarthria viscida	34, 69	Rootex	143
Pseudosassa japonica	114	Rooton	143
Psidium guajava	86	Rubia cordifolia	69
Psilotum nudum	110	Ruta chalapensis	100
Pteris aspericaulis	111	Ruta graveolens	23, 25, 28, 30, 146
Pteris biaurita	110	Saccharum spontaneum	100

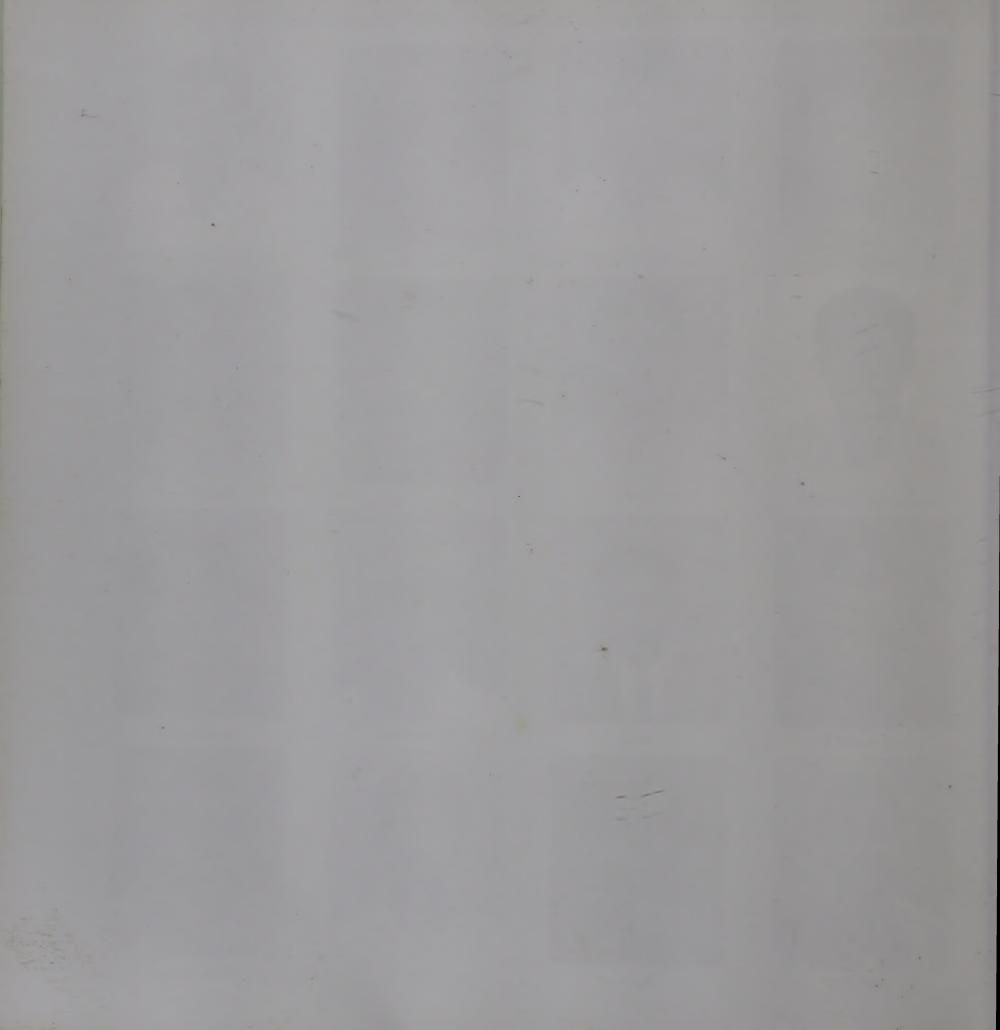
Name of species	Page no	Name of species	Page no
Salacia chinensis	69	Sesbania grandiflora	87
Salix tetrasperma	86, 119	Shoot rotting	146
Salvia officinalis	100	Shorea robusta	13, 87
Salvinia molesta	110	Shorea tumbaggaia	34, 87
Sanseviereia roxburghiana	120	Shrubs	48-59
Santalum album	34, 86	Sida acuta	101
Sapindus emarginatus	86	Sida cordata	101
Sapindus muckrosii	86	Sida cordifolia	101
Saraca asoca	13, 23, 26, 29, 141	Smilax zeylanica	69
habit	153	Softwood cuttings	143
propagation	153	Solanum erianthum	58
Sarcostemma acidum	69	Solanum khasianum	58
Sarcostemma brunonianum	120	Solanum melongena var. insanum	101
Saussurea lappa	23, 25, 27	Solanum nigrum	101
Satyrium nepalensis	107	Solanum pubescens	58
Sauropus androgynus	23, 25, 28, 31, 58	Solanum seaforthianum	70
Sauropus quadrangularis	58	Solanum surattense	101
Scaevola taccada	58	Solanum torvum	58
Schefflera stellata	58	Solanum violaceum	101
Schima wallichii	86	Sowing	136,142, 149, 150, 153
Schizostachyum helferii	113	Soymida febrifuga	22, 24, 27, 87
Schumannianthus virgatus	58	Sphenomeris chinensis	110, 111
Scilla hyacinthina	100	Sphenostephanus subtruncatus	110
Sebastiana chamaelea	100	Spilanthes calva	101
Securinega leucopyrus	58	Spilanthes oleracea	101
Selaginella spp.	109	Spondias pinnata -	87
Selaginella hookerii	110	Stachytarpheta mutabilis	59
Selaginella intermedia	110	Stem cuttings	141, 142, 143, 150, 151, 155
Semecarpus anacardium	23, 25, 28, 86	Sterculia foetida	87
Semi-hardwood cuttings	143, 149, 152, 153	Streblus asper	87
Seridex	143	Strychnos nux-vomica	87

Name of species	Page no	Name of species	Donono
Succulent wood cuttings	143	Tragia involucrata	Page no
Swietenia mahagony	87	Tragia piukenetii	
Syzygium cumini	87	Trapa bispinosa	102
Tacca leontopetaloides	101	Trapa natans	119
Tagetes erecta	118	Trees	102
Tamarix ericoides	59	Trewia nudifiora	71-88
Tarenna asiatica	59	Tricalysia sphaerocarpa	88 88
Taxus spp.	121	Trichopus zeylanicus ssp. travancoricus	34, 102
Taxus wallichiana	23, 25, 27, 87	Trichosanthes palmata	70, 121
Tecomella undulata	87	Tunnels	117, 122
Tectaria coadunata	110, 111	Tylophora indica	70
Terminalia arjuna	13, 88	Typha angustata	59, 119
Terminalia bellirica	22, 88	Upavana Vinoda	12
Terminalia catappa	88	Uraria picta	102
Terminalia chebula	88, 146	Utleria salicifolia	22, 34, 59
Thalictrum foliolosum	101	Valeriana hardwickii	13
Theriophonum minutum	101	Vallaris solanacea	70
Thespesia populnea	88	Vanda coerulea	107
Thevetia nerifolia	59	Vanda parviflora	107
Thottea siliquosa	59	Vanda roxburghii	107
Thunbergia fragrans	70	Vanda spathulata	107
Thymus vulgaris	102	Vanda teres	107
Thyrsostachys oliverii	112	Vanda tessellata	107
Tinospora cordifolia	22, 24, 27, 30, 61, 70, 121, 146	Vanda testaceae	107
habit	153	Vanilla planifolia	107
propagation	153	Vanilla wightiana	107
Tinospora crispa	121	Vateria indica	34, 88
Tinospora sinensis	34, 70	Ventilago denticulata	70
Toddalia asiatica var gracilis	70	Vernonia cinerea	102
Topiary	89, 117, 121	Vertical gardening	120, 121
Topography	20, 23, 121	Vetiveria zizanioides	13, 102, 119, 143
ropograpiny	20, 20, 121	Votivoria Pizariiologo	13, 102, 110, 140

Name of species	Page no	Name of species	Page no
habit	153	Wilting	146
propagation	153	Withania somnifera	23, 25, 28, 31, 102, 136, 146
Vitex altissima	88	habit	153
Vitex leucoxylon	59, 119	propagation	153
Vitex negundo	23, 25, 28, 30, 147	Withering	146
habit	153	Wrightia tinctoria	88
propagation	153	Ximenia americana	88, 121
Vitex negundo var. negundo	59	Zeuxine longilabris	107
Vitex negundo var. purpurescens	59	Zeuxine strateumatica	107
Vitex trifolia	59	Zeuxine sulcata	107
Vitis vinifera	70	Zingiber spp.	143
Vrikshayurveda	12	Zingiber cassumonar	102
Waste management	145	Zingiber officinale	13, 23, 24, 27, 30, 102
Wattakaka volubilis	70	Zingiber zerumbet	102
Wedelia calandulacea	102, 118	Ziziphus mauritiana	88
Weeding	124, 125, 136, 145	Ziziphus oenoplia	59
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			

The hardwork of these members has also helped in establishing and maintaining the EMG at I-AIM







## COMMENTS

"It was indeed a great pleasure to browse through the contents of the Manual titled, 'Secrets of Ethno Medicinal Gardens'. The contents are quite informative."

Poornima UB, Head - projects, ncbs, GKVK, Bellary Road, Bangalore

"Congratulations to the FRLHT Team for bringing forth such a comprehensive and excellent book on madicinal plants in landscaping. The hard work and research that the Team has put in shows in the vast selection of plants, the excellent pictures, the varied topics that have been covered and in the overall presentation of the book. I am sure it will be a valuable resource and reference book to amateurs and professional alike. It will also promote awareness of medical plants and inspire many to use them in the landscapes."

Narendran, Prakruti Creations Landscape Architecture, #25, Prashant Exten\_ sion, Whitefield, Bangalore

"Ours being the first 100% eco resort, we wanted to ensure that we id everything completely different, including our landscaping. This is where FRLHT stepped in and were able to understand our concept completely and come back to us with recommendations on what to do in a very clear manner. The result has been very good. Every single guest who comes to our resort is appreciative of the work done by FRLHT."

C B Ramkumar, Founder & Managing Director, Our Native Village Eco Resort, Hesaraghatta, Bangalore

Foundation for Revitalisation of Local Health Traditions (FRLHT)

No.74/2, Jarakbande Kaval Post : Attur, Via Yelahanka

Bangalore 560 106

Phone: +91 80 2856 8000/8001/8006

Fax: +91 80 2856 7926 Email: garden@tdu.edu.in

http://envis.frlht.org/amruthvana/

